

***United States Court of Appeals
for the Second Circuit***



**BRIEF FOR
APPELLANT**

76-7063

UNITED STATES COURT OF APPEALS

SECOND CIRCUIT

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Digitronics Corp., Now Amperex :
Electronic Corp., :

Plaintiff-Appellant-Appellee, :

v. :

The New York Racing Association, Inc., :
Automatic Totalisators (U. S. A.) LTD., :
Automatic Totalisators LTD., and :
Premier Equipment Proprietary LTD., :

Defendants-Appellees-Appellants. :
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B
Docket No.

76-7063
P/B

Appeal From the United States District Court
For the Eastern District of New York
(John F. Dooling, Jr., District Judge)

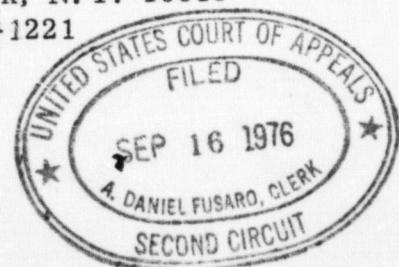
BRIEF OF THE APPELLANT

New York, N. Y.
June 11, 1976

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PRELIMINARY STATEMENT

NAME OF JUDGE: The Honorable John F. Dooling, Jr.,
United States District Judge for the Eastern District of New York.

CITATION: 187 USPQ 602, but excluding Parts II, III and V and
without the Annexes. The entire Memorandum and Order with Annexes
and Findings of Fact dated September 16, 1975 (over 250 pages),
together with the Supplemental Memorandum and Order dated
January 13, 1976, are duplicated in the Deferred Joint Appendix.

No Federal Supplement report has been found.

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ABBREVIATIONS

- A = Appendix (followed by page number)
- CL = Conclusion of Law (followed by Conclusion number)
- F = Finding of Fact (followed by Finding of Fact number)
- M = Memorandum and Order of September 16, 1975
(followed by page number)

Transcript Reference Codes

		<u>Witness</u>	<u>Witness of</u>
TR	= Transcript	Do = Dodwell	Plaintiff (deposition)
PX	= Plaintiff's exhibit		
DX	= Defendants' exhibit	Fo = Fosse	Defendants
D	= Direct	Hi = Highleyman	Defendants
X	= Cross	Le = Leonard	Defendants
RD	= Redirect	Ly = Lynch	Defendants (deposition)
RX	= Recross	Pr = Presson	Plaintiff (deposition)
RRD	= Re-redirect		
RRX	= Re-recross	Sp = Spiezens	Defendants (deposition)
RBD	= Rebuttal direct	Wa = Warren	Defendants (deposition)
RBX	= Rebuttal cross		
RBRD	= Rebuttal redirect	We = Weida	Plaintiff

Example: WeRX2326 = Transcript page 2326 of plaintiff's witness Weida's recross testimony

EMPHASIS -- Emphasis throughout is patentees' except for citations of case names and where otherwise indicated.

BRIEF OF THE APPELLANT

I. ISSUES PRESENTED FOR REVIEW

Did the Lower Court reversibly err in --

- (1) Failing to follow the Supreme Court's and this Court's uniform procedure to resolve the obviousness-nonobviousness issue, especially by not considering the overwhelming indicia of nonobviousness, and invalidating the patent on its face?
- (2) Finding that the § 103 pertinent art is the general data processing field rather than the specific long-known parimutuel totalisator business which gave rise to the problems solved by the patentees?
- (3) Refusing to permit patentees to examine defendants' totalisator witness on § 103's level of "ordinary skill in the [pertinent] art?"
- (4) Finding that the commercially incompetent feasibility prototype of part of the patented racetrack parimutuel totalisator was reduced to practice as a prior invention?
- (5) Invalidating all of the claims in issue because patentees could not find all the drawings for the feasibility prototype (an affirmative defense) or adequately explain why?
- (6) Concluding that the accused systems, which performed all of the functions of the claimed means, did not infringe because of the incorporation in each system of a software programmed general-purpose digital computer (undermining the subsequent Supreme Court Johnston case)?

II. STATEMENT OF THE CASE

A. NATURE OF THE CASE: This is a patent case with an antitrust counter-claim.

(1) Patent in Suit: Weida et al patent No. 3,252,149 filed March 28, 1963 and issued May 17, 1966 with 33 claims. (A301 PX1) Only Claims 20-27 are accused of infringement and are in issue. The patent relates to parimutuel systems "employed for servicing . . . wagers made by spectators at sporting events." (A301 PX1, col.1, lines 14-25) They are commonly called totalisators (or totalizators) because they total wagers in order to compute payoff prices and other betting data.

(2) Accused Systems: NYRA Totalisator System and PDP-8 Totalisator System.

(3) Technology Involved: Digital computer technology. But there is no need to understand that technology in order to decide nearly all of the issues presented for review. In particular, there is little need to read the voluminous technical explanations in the Lower Court's Memorandum. The issues presented for review mainly involve matters of law. There are only a few issues of fact.

(4) Parties: Plaintiff, Digitronics Corporation, employed the five named joint inventors and is the assignee of the patent (the joint inventors are usually termed "patentees"). Amperex Electronic Corporation is Digitronics' successor in interest of the patent. (A275 F2) Defendant, The New York Racing Association (NYRA), operates Aqueduct Raceway. The remaining three defendants, Australian corporations, are jointly termed Atusa. (A275 F3-6) Atusa

supplied the accused NYRA Totalisator System to NYRA, which led to this litigation. Atusa thereafter manufactured the accused PDP-8 Totalisator System for use by other racetracks.

B. COURSE OF PROCEEDINGS: The action was filed November 27, 1967.

After a dispute over venue, later withdrawn by defendants, discovery proceeded. The trial began on December 19, 1974 and terminated on January 24, 1975, with 25 days of trial. Judgment was filed September 19, 1975 pursuant to a Memorandum and order with Annexes and Findings of Fact (over 250 pages) dated September 16, 1975. Plaintiff's motion to amend the findings and defendants' motion to amend the judgment were denied on January 13, 1976. Plaintiff appealed on February 11, 1976 and defendants then cross appealed.

C. DISPOSITION IN COURT BELOW

The Lower Court concluded as a matter of law that Claims 20-27 of the patent are invalid under 35 U.S.C. § 102 and § 103 (A294 CL50A). Also that the accused devices do not infringe claims 20-27. (A294 CL50B)

The § 102 invalidity conclusion, lack of novelty, is based on a finding that Claims 20-22 read on a feasibility prototype of a portion of the totalisator system disclosed in the patent. (A291 F43) The prototype was found to be a prior invention (§ 102(g)). (A288 F40, 49) Claims 23-27 were held invalid solely on the basis of plaintiff's "failure to make disclosure of the details of the [prototype] or adequately explain its inability to do so." (A293 F47)

The § 103 invalidity conclusion, obviousness, is based on a conclusion that

on the face of the patent and in the light of the disclosures of its cited material, that the claims in suit do not embrace any patentable discovery or invention. . . . consideration of the totalizators of the prior art confirms the conclusion that no patentable discovery or invention is present. (A220 M182)

The only prior art seriously considered is a Handley totalisator system patent (A221 M183-200; A945 DXBQ) and the 1961 totalisator at defendant NYRA's Aqueduct Raceway, designed and supplied by the American Totalisator Co. (Amtote), which preceded the accused system. (A238, A281 M200-201, F24-29)

The noninfringement conclusion is on the basis that a programmed general-purpose digital computer which performs the same functions as the claimed machine means is a "new use of a known machine, and that is a process under 35 U.S.C. 100(b)." (A251 M213)

Additionally, the Lower Court concluded as a matter of law that the patent was not procured through fraud or concealment or culpable negligence (A294 CL51) and no violation by plaintiff of the antitrust laws has been shown. (A294 CL52) Attorneys fees were denied defendants in the Memorandum and Order of January 13, 1976. (A298)

D. FACTS RELEVANT TO THE ISSUES PRESENTED FOR REVIEW

(1) History of the Totalisator Business Before the Claimed Inventions Were Made

The relevant historical highlights of the totalisator business can mostly be culled from the Lower Court's Memorandum and Findings of Fact, supplemented with facts from the record based on evidence which is substantially uncontroverted.

Prior to 1960, Amtote serviced approximately 200 racing associations in the United States and, by 1962, had almost a total monopoly of the totalisator business. (A283 F30) Amtote had a long term and continuing interest in using electronic data processing means in parimutuel betting systems. (A284 F31) Over the years Amtote personnel had received and assigned to Amtote many totalisator patents. (A279 F20) As late as March 1962, Amtote, then with nearly thirty years experience designing and supplying totalisators to the racetrack industry, claimed that it was "well equipped to maintain its leadership in the totalisator field" and "had consistently led the way in introducing new equipment to give better, faster and more accurate service." (A425 PX67)

In December 1962 Amtote emphasized its improvements in its equipment over the years including its use of solid-state or transistorized computer elements. (A91 M53) At that time, the epitome of the state of the totalisator art was represented by Amtote's Model 7J. It comprised electro-mechanical totalisator aggregators for accumulating the total amounts bet on all entries in a race, with an adjunct solid-state electronic digital price computer for calculating payoffs. (A281 F24-26) According to Amtote, the introduction of the computer was a "major breakthrough" in bringing complete totalisator service to the tracks. (A833 DXC-1-2)

The principal deficiency of the Amtote Model 7J Totalisator was that it could not aggregate daily double betting. (A42 M4) Daily double bet processing was done manually by "hanging out the wash." It was one of the worst parts of the parimutuel job and it was a burden they wanted to get rid of. That deficiency resulted in the loss of about five minutes of selling, amounting

to a daily loss of about ten to twenty thousand dollars in betting at Roosevelt Raceway. (A1090 LyX377-388a) According to defendant NYRA's experts, the degree of human intervention, under time pressure, involved an inordinate risk of error. (A395 PX38-4-6)

To add a daily double capacity to the Amtote Totalisator was uneconomic. It would have required three times as much equipment for use only once a day. (A1217 FoX2105)

The need to improve the electromechanical totalisator operation, and do it quicker, cheaper and with less help, goes back to as early as 1954. (A1084,

A1088 LyX362-63, 375-76) In the early 1950s the parimutuel betting industry was straining at its seams and demanding new and faster totalisator services. (A1334 DoD3554; A411 PX43-7)

With the advent of electronic data processing, it was evident to those in the totalisator business that electronic devices ought in theory make possible savings in time, space, cost and personnel at racetracks, and considerable work was done along those lines. (A284 F32) But prior to the patentees, no one, especially Amtote, was able to build a successful all-electronic totalisator which would automate daily double betting.

As early as around 1945, Amtote had designed and tested an all-electronic totalisator but it was not reliable enough to put into practical use. (A280 F21) In 1947, Amtote was again unsuccessful with an experimental installation at Roosevelt. (A42 M4-5) There was some evidence of other Swedish and Canadian failures. (A285 F35; PX129-1-2, PX26, LyX370, LeD2514, PX174, 174A) As late as 1962, Amtote was telling the totalisator business that a practical all-electronic totalisator could not be built. (A284 F31)

But the specific technology successfully employed by the patentees was available by the mid-1950s, and suitable technology even earlier. (A285 F33-34)

In 1958 Roosevelt Raceway wanted Amtote to use the available electronic computer techniques "to increase betting time and expedite delivery of pay-off information on daily double betting." (A42 M4) But Amtote never came through with any way to satisfy the need to automate the daily double. (A1087 LyX371)

(2) How the Claimed Inventions Were Made

The genesis of the patent was the work that Digitronics undertook with and for Roosevelt Raceway in 1959. (A41 M3) In May 1959 Digitronics, in a preliminary proposal to Roosevelt Raceway, outlined in detail an essentially solid state electronic system covering the functions of a parimutuel system. (A42 M4-11; A835 DXF) In order to determine the feasibility of digital electronic technique as an economical solution to the racetrack problems (A75 M37,65), Digitronics built a feasibility prototype all-electronic totalisator in 1961. (A69 M31) It was commercially incompetent. (A103 M65) The feasibility prototype was transferred to Roosevelt in September 1962 (A93 M55) with a set of drawings. (A98 M60) It was later relegated to a Roosevelt storeroom where it was found by defendants and acquired by them from Amtote. (A1325 TR3437-40)

The feasibility prototype encouraged Roosevelt to finance an experimental 100-TIM all-electronic totalisator. (A70; A76 M32-33, M38-39) Termed the First Tote, it was first tested with 20 TIMs by Digitronics at Roosevelt in March 1963 and was a spectacular success. (A92 M54-55)

The First Tote was immediately recognized as a marvel, a breakthrough and the answer to a parimutuel manager's prayers. (A1103 LyX393-395)

The patent specification was drawn from the First Tote and reflects its electronic makeup. (A161 M123) It comprised "newer means." (A237 M199-200) Conception of the claimed inventions of the First Tote was between mid-1962 when construction was initiated and latter 1962 when it was decided to demonstrate the experimental 20-TIM First Tote. (A1146 WeD1180-82) The claimed inventions were reduced to practice about May 1, 1964 when the team leader Weida was satisfied that the First Tote, with a full complement of daily double TIMs, operated in a satisfactory manner and was ready to pass the test and satisfy the requirements of the New York State racing authorities. (A1107 WeD535)¹

The March 1963 demonstration of the experimental 20-TIM First Tote was not with real bets; no actual races were being run at that time. (A982 WeD65-72; A354 PX5, 6, 6A, 6B) It was not until April 15, 1964 that the First Tote was tested at Roosevelt Raceway with real bets on daily and twin doubles. After a 25 day test period the New York State authorities approved the First Tote for daily double and twin double betting. (A377 PX21, 22) On May 11, 1965, New York State approval was given to add regular betting to the First Tote. (A379 PX23)

From the original Digitronics proposal of May 1959, it took five years for Digitronics to design, completely conceive, build, test, reduce to practice and get State approval for an all-electronic totalisator to process daily double bets, and six years to process all bets.

1. The patentee Weida's testimony was characterized by Judge Dooling as "unshrinking frankness." (A99 M61)

(3) Economic Impact of the Claimed Inventions

After the spectacular demonstration of the experimental 20-TIM First Tote in March 1963 and before the year was out, NYRA sought its own fully-automatic all-electronic totalisator. (A387 PX37) On June 24, 1964 Atusa described its proposal to design for NYRA an all-electronic totalisator: "... in general our entire operation would be comparable to the [First Tote] with the exception that the computer would be Honeywell 200...." (A678, A687 PX162-2, 175-21; A1312 HiX3083-84)

On June 23, 1964, NYRA was informed of the approval of the First Tote by the New York State authorities. (A676 PX161-2) On July 30, 1964, NYRA signed an agreement with Atusa to design and build the NYRA Totalisator. (A687 PX175) It was first demonstrated by November 22, 1965. (A683 PX169) The flattery of infringement could not have been more immediate. And the clincher -- Atusa believed that the NYRA Totalisator (the first copy of the First Tote) was itself revolutionary! (A1335 DoD3568) The First Tote itself was later acquired by Amtote. (A1327 TR3439-40)

In 1962 it was believed by Digitronics that the first electronic totalisator would obsolete existing electromechanical machines. (A93 M55) That turned out to be true. But Amtote's belief that a successful all-electronic totalisator could not be made was so profound that it was not until 1969 or 1970 that it bowed to the inevitable and offered a competitive fully-automatic all-electronic totalisator. (A1333 DoD3548, 3580) By 1974, Amtote had supplied 35-40 all-electronic totalisators to Atusa's 15 and Western Totalizators about two. (A1330 TR3530, 3532) Commercial success is reflected in that massive infringement. The fully-automatic all-electronic totalisator incorporating

patentees' inventions has, indeed, substantially supplanted the prior art electro-mechanical totalisators. (A1332 DoD3536)

(4) Historical Perspective -- The State of the Art in 1960

To return to the state of the totalisator art in 1960, when Digitronics was just starting to tackle the racetrack totalisator problems, the enormity of the problems can be sensed from the following quotes from a letter from Western Totalizator's Joseph Lease to Roosevelt Raceway's George Morton Levy in July 1960 (A426 PX86):

You are a man who gained my respect many years ago, but rather than see you subject yourself to the hazards of a fully electronic totalizator, I plead with you now -- forget that you ever heard of Western Totalizator Company and Digitronics and continue with American Totalizator Company. . . . Your organization can enjoy a tremendous economy by remaining close to the proven, practical methods of totalizator installation. Deviating too far from this proven path can only result in complete chaos and embarrassment that you will never live down. (p.1, par. 1). . . .

I want to thank you for allowing me to read the presentation made by Digitronics describing their fully electronic totalizator. . . . They are so far away from having an economical, workable totalizator that it is downright pathetic. They have violated every rule in the book that insures the continuity of performance of a successful totalizator installation. (p.1, par. 2). . . .

. . . . The solid state technique that they are incorporating in their electronic totalizator has been discussed and discarded by men of the highest standing in the electronic field, that is, so far as application to a totalizator is concerned. . . . we established that to maintain speed, accuracy and economy, the cost for this central equipment would be prohibitive. (p.2, par. 3). . . .

. . . . In all fairness, I must say that Digitronics' new technique of affecting a differential sequence access to the same memory for computational procedure is remarkable, if and when it can be done. However, it is new only if coupled with electronic aggregating equipment. If they are able to perfect this phase electronically, they are going into the wrong business. The opportunities in the computer field are a thousand times greater. (p.4, par. 1). . . .

The prototype that is now being built by Digitronics has a maximum capacity of only 16 T.I.M.s. Men like yourself and Mr. Tannenbaum, who have made tremendous, applaudable progress

in the harness racing field, can fully appreciate that the functioning of an electronic totalizator, when tied to 400 machines, could very well produce unacceptable results. It is much like a race horse who can run very well carrying 105 pounds but cannot perform as well when carrying 135 pounds. It is unfortunate, therefore, that the possibility of failure cannot be established by testing the prototype that is now being built by Digitronics. (p. 4, par. 4)

III. SUMMARY OF ARGUMENT

In 1960, Judge Learned Hand in Reiner counselled that the only reliable way to resolve the issue of obviousness was by reference to the history of the art, including such "signposts" as "how long did the need exist; how many tried to find the way; how long did the surrounding and accessory arts disclose the means; how immediately was the invention recognized?" In 1966, Reiner was cited with approval by the Supreme Court in Graham, where the Court mandated the following procedure to resolve the obviousness-nonobviousness issue:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

The Court added:

[s]uch secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness these inquiries may have relevancy. (Point A)

The Lower Court made no such inquiry and disregarded the overwhelming indicia of nonobviousness.

There was a long-felt but unsolved need for an all-electronic totalisator which would economically automate daily double bet processing. The necessary technology was available at least as early as the mid-1950s. Amtote, the leader in the design and supply of totalisators, had failed to solve that need. Moreover, Amtote believed and represented that the problems could not be solved. As a result of the March 1963 experimental demonstration of the 20-TIM First Tote, which included the claimed inventions, there was an immediate

recognition that the patentees had satisfied the long-felt need. The First Tote was immediately recognized as a marvel, a breakthrough and the answer to a parimutuel manager's prayers. The flattery of imitation, infringement, by NYRA was immediate. And even its NYRA Tote was deemed revolutionary by its builders. The prior art Amtote hybrid electromechanical-electronic totalisator was made substantially obsolete. The inventions achieved commercial success. (Point B)

Compared to the prior art Amtote totalisator, the First Tote was faster, more accurate, more flexible, more compact, more reliable and less expensive -- especially since it economically automated daily double betting. (Point I(3))

The Lower Court completely disregarded the uniform procedure mandated by the Supreme Court and this Court to resolve the § 103 obviousness-non-obviousness issue. Instead, with the wisdom of hindsight, it held the patent invalid on its face as "ABC data processing". (Point D)

This primordial error was compounded by a second primordial error -- finding that the § 103 pertinent art was not the long-known and well-developed totalisator business, which gave rise to the problems, but data processing generally. In the subsequent Johnston case, the Supreme Court found the pertinent art to be the banking equipment industry and not the electronic digital computer technology. In the most recent case, Ag Pro, the Supreme Court found the pertinent art to be the dairy business and not the general agricultural field. (Point C)

These combined primordial errors led to a series of derivative errors such as refusing to permit patentees to examine defendants' totalisator witness on the § 103 level of ordinary skill in the pertinent art. (Point E) And

concluding that the commercially incompetent feasibility prototype was a prior invention even though completion of an invention by reduction to practice does not occur until the end of experimentation -- surely after the March 1963 testing of the 20-TIM First Tote. (Point G) But the prototype designers should be added to the patent as joint inventors. (Point H)

Moreover, the Lower Court grossly erred in invalidating the claims because patentees could not find all of the feasibility prototype drawings or "adequately" explain why, when defendants had the actual prototype, said before trial that they would rely on the prototype discovery, and the burden of proving that affirmative defense was constantly on defendants by virtue of the statutory presumption of validity. (Point F)

While finding all of the claimed functions to be present in the accused systems, the Lower Court concluded that there was no infringement because each system used a software programmed general-purpose computer. That was deemed by the Lower Court to be an old machine and thus could infringe only process claims rather than the machine system claims in issue.

In technological fact, a software programmed general-purpose computer is a new machine. (Point J) It is also a technological fact that a software programmed computer is the structural equivalent of a machine system if it performs the same functions; so the accused systems at least infringe under the doctrine of equivalents. (Point K) In any event, crucial functions are performed in the accused systems by newly designed equipment and not by the programmed computers, which are only a relatively small part of each accused system. (Point M)

The judgment of invalidity and noninfringement should be reversed and an accounting ordered. (The right to an injunction has been waived.)

IV. ARGUMENT

A. FAILURE TO FOLLOW THE SUPREME COURT'S AND THIS COURT'S UNIFORM PROCEDURE TO RESOLVE THE OBVIOUSNESS-NONOBVIOUSNESS ISSUE, AND INVALIDATING PATENT ON ITS FACE -- THE LOWER COURT'S FIRST PRIMORDIAL ERROR

Judge Dooling concluded that the patent is invalid on its face (M182) without even paying lip service to the uniform procedure to determine the issue of obviousness under 35 U.S.C. § 103 mandated by the Supreme Court in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), and recently ~~twice~~ reaffirmed in Dann v. Johnston, 96 S.Ct. 1393, 189 USPQ 257 (1976) and Sakraida v. Ag Pro, Inc., 96 S.Ct. 1532, 189 USPQ 449 (1976).

In Ag Pro, the Supreme Court stated:

It has long been clear that the Constitution requires that there be some "invention" to be entitled to patent protection. Dann v. Johnston, ___ U.S. ___ (1976). As we explained in Hotchkiss v. Greenwood, 11 How. 248, 267 (1851): "[U]nless more ingenuity and skill... were required... than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention. In other words, the improvement is the work of the skillful mechanic, not that of the inventor." This standard was enacted in 1952 by Congress in 35 U.S.C. § 103 "as a codification of judicial precedents... with Congressional directions that inquiries into the obviousness of the subject matter sought to be patented are a prerequisite to patentability." Graham v. John Deere Co., 383 U.S. 1, 17 (1966). Section 103 provides:

"A patent may not be obtained though the invention is not identically disclosed or described, as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art

are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made."

The ultimate test of patent validity is one of law, A&P Tea Co. v. Supermarket Corp., 340 U.S. 147, 155 (1950), but resolution of the obviousness issue necessarily entails several basic factual inquiries, Graham v. John Deere Co., supra, at 17.

"Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved." Ibid.

The Ag Pro decision terminated with: "See Dann v. Johnston, supra, at ___ n. 4." That note stated in pertinent part:

While "commercial success without invention will not make patentability," A&P Tea Co. v. Supermarket Corp., 340 U.S. 147, 153 (1950), we did indicate in Graham v. John Deere Co., 383 U.S. 1 (1966), that "secondary considerations [such] as commercial success, long felt : unsolved needs, [and] failure of others" may be relevant a determination of obviousness. Id., at 17.

The Supreme Court in Graham cited with approval this Court's landmark decision by Judge Learned Hand in Reiner v. I. Leon Co., infra. In Timely Products Corp. v. Arron, 523 F.2d 288, 292, 187 USPQ 257, 261 (2d Cir. 1975), this Court stated:

It is always difficult in evaluating an invention particularly in a device as simple as that involved here, to avoid "slipping into use of hindsight" and to "resist the temptation to read into the prior art the teaching of the invention in issue." Graham v. John Deere Co., 383 U.S. 1, 36, 148 USPQ 459, 474 (1966). For that reason, Judge Learned Hand, in his landmark decision in Reiner v. I. Leon Co., 285 F.2d 501, 128 USPQ 25 (2d Cir. 1960), cert. denied, 366 U.S. 929, 129 USPQ

502, reh. denied, 366 U.S. 978 (1961), counselled that the only reliable way to resolve the issue of obviousness was by reference to the history of the art, including such "sign-posts" as

"how long did the need exist; how many tried to find the way; how long did the surrounding and accessory arts disclose the means; how immediately was the invention recognized * * *?" 285 F.2d at 504, 128 USPQ at 27.

This decision was cited with approval by the Supreme Court in *Graham v. John Deere*, supra at 36, and was doubtless a major tributary of the Court's oft-quoted statement that

"[s]uch secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy." 383 U.S. at 17-18, 148 USPQ at 467.

In referring to such factors as "secondary considerations" the Court surely did not intend to depreciate their importance, but only to indicate that they are to be considered after a preliminary determination of the precise subject matter at issue has been completed:

"Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined." 383 U.S. at 17, 148 USPQ at 467.

We can conceive of no better way to determine whether an invention would have been obvious to persons of ordinary skill in the art at the time, than to see what such persons actually did or failed to do when they were confronted with the problem in the course of their work. If the evidence shows that a number of skilled technicians actually attempted, over a substantial period, to solve the specific problem which the invention overcame and failed to do so, notwithstanding the availability of all the necessary materials, it is difficult to see how a court could conclude that the invention was "obvious" to such persons at the time.

In determining obviousness or nonobviousness, this Court has emphasized two additional considerations, the flattery of immediate infringement (imitation) and invention search discouragement.

In Lancaster Colony Corp. v. Aldon Accessories, Ltd., 506 F.2d 1197, 1199-1200, 184 USPQ 193, 195 (2d Cir. 1974), in which a design patent was held valid, Circuit Judge Oakes stated:

Here there not only was commercial success, which in an otherwise close case might tip the scales, but there was also clearcut imitation by the appellants. ***

Some time ago this court said in a case that has since been followed in the Fourth and Fifth Circuits among others,

'The imitation of a thing patented by a defendant, who denies invention, has often been regarded, perhaps especially in this circuit, as conclusive evidence of what the defendant thinks of the patent, and persuasive of what the rest of the world ought to think.'

Kurtz v. Belle Hat Lining Co., 280 F. 277, 281 (2d Cir. 1922). See also Shaw v. E.B. & A.C. Whiting Co., 417 F.2d at 1106, 163 USPQ at 587.

In Vanity Fair Mills Inc. v. Olga Co. (Inc.), 510 F.2d 336, 339-340, 184 USPQ 643, 645 (2d Cir. 1975), in which a patent on a panty brief was held invalid, Circuit Judge Anderson stated:

In Adams the Supreme Court stated that 'known disadvantages in old devices which would naturally discourage the search for new inventions may be taken into account in determining obviousness.... This principle was most recently applied in this Circuit in Shaw.²

²The Adams patent, held valid by the Supreme Court, was for a battery comprising magnesium and cuprous chloride. The prior art disclosed batteries made of zinc and silver chloride, and that magnesium may be substituted for zinc and cuprous chloride for silver chloride. But the prior art taught away from the claimed invention as a combination. That was not the case with the panty brief patent which differed from the prior art only in moving a loose abdomen flattening panel from the inside to the outside. That difference was too insubstantial to permit commercial success and other considerations, excluding invention search discouragement and flattery of infringement (discontinued after two years), to tip the scales. United States v. Adams, 383 U.S. 39, 50, 148 USPQ 479, 483-84 (1966)

Judge Dooling failed to follow the uniform procedure established by the Supreme Court and this Court to resolve the obviousness-nonobviousness issue -- a primordial error.

B. EVIDENCE OF INVENTION IS OVERWHELMING BECAUSE ALL OF THE INDICIA OF NONOBVIOUSNESS RECOGNIZED BY THE SUPREME COURT AND THIS COURT ARE PRESENT

The uniform procedure mandated by the Supreme Court and by this Court to determine obviousness under § 103 may be detailed into the following logical order of inquiry steps:

- (a) What is the pertinent art?
- (b) What is the time the invention was made (i.e. complete conception)?
- (c) What was the level of skill of a person having ordinary skill in that pertinent art at that time?
- (d) In addition to the pertinent art, what other arts and technologies is that person charged with an awareness of (to determine the scope of the prior art)?
- (e) What is the relevant content of that prior art?
- (f) What are the differences between the claimed subject matter and that prior art?
- (g) Would those differences be obvious or nonobvious to that person with that level of ordinary skill in that pertinent art at the time the claimed subject matter was completely conceived, taking into account the following indicia of nonobviousness:
 - (1) Long-felt but unsolved need;
 - (2) Solution availability (how long did the arts disclose the means?);

- (3) Invention search discouragement;
- (4) Failure of others (how many tried to find the way?);
- (5) Invention recognition (how immediately was the invention recognized as an answer?);
- (6) Flattery of immediate infringement;
- (7) Commercial success.

To quote this Court in Lancaster Colony, supra: "commercial success ... in an otherwise close case might tip the scales." But here, each of these seven indicia of nonobviousness is satisfied by the claimed inventions. The evidence of nonobviousness is overwhelming.

But Judge Dooling gave that evidence substantially no consideration.

And he really followed no logical order of inquiry. After first primordially erring in the pertinent art Step (a), he did not find the invention time in Step (b) or determine the level of ordinary skill in Step (c). Most importantly, he never reached the key obviousness-nonobviousness inquiry of Step (g), especially to take into account indicia of nonobviousness.

In terms of the indicia of nonobviousness cited by the Supreme Court and this Court, the relevant history outlined in the Statement of Facts may be summarized as follows.

There was a long-felt but unsolved need for an all-electronic totalisator which would economically automate daily double bet processing. The necessary technology was available at least as early as the mid-1950s. Amtote, the leader in the totalisator business, had failed to solve that need and represented that it could not be solved. As a result of the March 1963 demonstration of the First Tote, there was an immediate recognition that Digitronics had satisfied the need. The First Tote was deemed a marvel, a breakthrough and the answer to a

parimutuel manager's prayers. The flattery of infringement by NYRA was immediate. And even its NYRA Tote, the second fully-automatic all-electronic totalisator, was deemed revolutionary by its builders. The prior art Amtote Model 7J hybrid electromechanical-electronic totalisator was made substantially obsolete. The inventions achieved commercial success, unfortunately not by the patentees, but by virtue of the large scale copying by the infringers.

Each of the seven indicia of nonobviousness is present, plus the fact of obsolescence of the prior art device and the recognition of even the first copy as revolutionary.

In failing to take into account any of these indicia of nonobviousness, Judge Dooling grossly erred. The case should be remanded with instructions to enter a judgment of validity. 25 days of trial are enough.

Judge Dooling displayed an absolute mastery of the esoteric digital computer technology employed in the patent specification. He completely understood the teachings of the patent in the most minute detail. Unfortunately for the patentees, however, Judge Dooling's brilliant technological achievement led him to the conclusion "on the face of the patent and in the light of the disclosures of its cited materials, that the claims in suit do not embrace any patentable discovery or invention" (A220 M182) To put it simply, having fully understood the claimed inventions with the benefit of patentees' teachings, it was all obvious to him.

In over 250 pages of Memorandum and Order, Annexes and Findings of Fact, not once did Judge Dooling even mention Graham. Nor did he follow any of the procedure mandated by the Supreme Court and by this Court to determine the issue of obviousness. He completely ignored Judge Learned Hand's counsel that

the only reliable way to resolve the issue of obviousness was by reference to the history of the art, including its "signposts", termed secondary considerations by the Supreme Court. In a nutshell, he failed to avoid "slipping into use of hindsight."

Moreover, he made a complete shambles of the statutory presumption of validity, 35 U.S.C. § 282. If that section means anything, it means that a patent is valid on its face.

A more valid use of that term is that the Lower Court's invalidity conclusion is reversible on its face. Judge Dooling's failure to follow the Supreme Court's and this Court's procedure to determine the issue of obviousness was a primordial error.

That primordial error was compounded by a second primordial error -- concluding that the § 103 pertinent art was not the historically well-developed totalisator business which had a long-felt but unsolved need, solved by the patentees, but data processing generally (not even the electronic data processing technology of the patentees). (A40 M2-3)

C. PERTINENT ART IS THE TOTALISATOR BUSINESS NOT THE GENERAL DATA PROCESSING FIELD -- THE LOWER COURT'S SECOND PRIMORDIAL ERROR

According to the Supreme Court, § 103's "person having ordinary skill in the art to which said subject matter pertains" has its precedent in Hotchkiss v. Greenwood. In Ag Pro, supra, the Court stated at 96 S.Ct. 1536, 189 USPQ 451, 452:

As we explained in Hotchkiss v. Greenwood, 11 How. 248, 267 (1851): "[U]nless more ingenuity and skill . . . were required . . . than were possessed by an ordinary mechanic acquainted with the business," This standard was enacted in 1952 by Congress in 35 U.S.C. § 103 "as a codification of judicial precedents"

In Ag Pro the pertinent art was the dairy business, not the agricultural field. In Johnston, supra, the pertinent art was the banking industry, not digital computer technology, and certainly not data processing generally.

That the Supreme Court in Johnston found the pertinent art to be the banking industry is confirmed in the following quotes:

There is no need to make the obviousness determination in this case turn solely on the nature of the current use of data processing and computer programming in the banking industry.

Again, as was the case with the prior art within the banking industry the Dirks invention is not equivalent to respondent's system. While the Dirks invention is not designed specifically for application to the banking industry many of its characteristics and capabilities are similar to those of respondent's system. Cf. Graham, supra, 383 U.S., at 35.

In making the determination of "obviousness," it is important to remember that the criterion is measured not in terms of what would be obvious to a layman but rather what would be obvious to "one reasonably skilled in [the applicable] art." Graham, supra, 383 U.S., at 37. In the context of the subject matter of the instant case, it can be assumed that such a hypothetical person would have been aware both of the nature of the extensive use of data processing systems in the banking industry and of the system encompassed in the Dirks patent. While computer technology is an exploding one, "[i]t is but an evenhanded application to require that those persons granted the benefit of a patent monopoly be charged with an awareness" of that technology. Id., at 19.

96 S.Ct. at 1398, 1399, 189 USPQ 261, respectively.

Similarly here. The pertinent art is the totalisator business and the hypothetical person in the totalisator business is charged with an awareness of digital computer technology. That charge is factually correct because ordinarily-skilled persons in the totalisator design business knew not only the electromechanical technology but digital computer technology. (A281 F24-26)

Three quotes from the Lower Court's Memorandum will serve to confirm that the pertinent art is the totalisator business.

At a Roosevelt Raceway stockholders meeting in April 1961, its president stated that Digitronics "have developed an electronic totalizator that will revolutionize the tote business." (A69 M31)

In June 1961, Roosevelt's president stated: "At present we are merely attempting to prove that existing technology in other fields, may be adapted to the needs of a multiple issuer."³ (A72 M34)

A Digitronics letter in July 1961 stated "that Digitronics had constructed a prototype electronic totalizator to demonstrate the feasibility of digital electronic technique as an economical solution to racetrack problems." (A75 M37)

Earlier, in July 1960, the head of Western Totalizator (an Amtote competitor), in expressing skepticism about Digitronics' capability of building an all-electronic totalisator, stated:

"In all fairness, I must say that Digitronics' new technique of affecting a differential sequence access to the same memory for computational procedure is remarkable, if and when it can be done. However, it is new only if coupled with electronic aggregating equipment. If they are able to perfect this phase electronically, they are going into the wrong business. The opportunities in the computer field are a thousand times greater." (A426 PX86-4)

The prior art relied on by defendants was nearly all in the totalisator art. Judge Dooling noted (A220 M182):

The prior art emphasized at the trial and considered in the posttrial briefs and proposed findings is all but confined to totalizator systems and patents. While it has been concluded on the face of the patent and in the light of the disclosures of its cited materials, that the claims in suit do not embrace any patentable discovery or invention, and it has been concluded that the relevant field for inquiry is data processing, of which racetrack totalizators are instances, consideration of the totalizators of the prior art confirms the conclusion that no patentable discovery or invention is present.

3. I. E., a ticket issuing machine for daily double betting.

Having already concluded that the claimed subject matter was obvious on its face, naturally any additional prior art inputs could only confirm that.

That the pertinent art is the totalisator business is supported by the patent itself (A301 PX1). Its first paragraph states: "This invention pertains to data processing systems and more particularly to systems for processing data received from ticket issuing machines."⁴

The primordial error that the § 103 pertinent art is the data processing field and not the totalisator business led to a number of derivative reversible errors, including the following.

- (1) Finding the claimed inventions on their face to be "ABC data processing." (See Point D)
- (2) Refusing to permit patentees to examine defendants' totalisator witness on § 103's level of "ordinary skill in the [pertinent] art." (See Point E)
- (3) Implicitly finding that the commercially incompetent feasibility prototype (A103 M65) was reduced to practice and, therefore, a prior invention. (See Point G)
- (4) Finding that the prototype contributions of patentee Weida in correcting blunders in logic and implementation (A99 M61-62) in at least ten weeks of work on the partially constructed prototype (A95 M57) did not meet the (relatively low legal) threshold of joint invention. (See Point H)

4. The Patent Office classified the patent, in accordance with the subject matter of its first claim, in Class 340--172.5. That class is for electrical communications "means... for controlling the operation of plural devices over a lesser number of communication lines than the number of different results which can be obtained by signalling over said line" and including "either a data processing system or an intelligence storing system." (A789 PX180) That class is not for general data processors, as may be suggested by Judge Dooling at Memorandum page 3. If Claim 20 were the first claim, the classification, no doubt, would have been in the totalisator art, Class 235-92. Note the reference to "totalisator art (Class 235-92)" at Memorandum page 2. (Also see A756 PX179 and Plaintiff's Classification Definitions of Classes Searched by Examiner, A1424)

(5) Completely disregarding crucial claim language in the claims as "null language" or "adding nothing." (See Point I(4))

D. IN COMPLETELY DISREGARDING THE HISTORY OF THE TOTALISATOR BUSINESS BEFORE THE CLAIMED INVENTIONS WERE MADE AND THEIR ECONOMIC IMPACT AFTERWARDS, AND WITH THE WISDOM OF HINDSIGHT GAINED FROM A COMPLETE MASTERY OF THE COMPLEX TEACHINGS OF THE PATENT, THE LOWER COURT ERRONEOUSLY RESOLVED THE OBVIOUS-NONOBVIOUS ISSUE BY FINDING THE PATENT OBVIOUS ON ITS FACE AS "ABC DATA PROCESSING"

Completely disregarding the history of the racetrack totalisator problems solved by patentees, Judge Dooling started his inquiry with the solution to the problems. That was his first primordial error -- disregarding Graham. That led to his second primordial error -- that the pertinent art was that of the inventors. From there, it was only a short step to the conclusion that what the inventors did was obvious to persons like the inventors. In analyzing the claims, Judge Dooling's masterful technical description was replete with such comments like:

Each component is, as the specification makes plain, a familiar of the prior art (existing in various forms), and it performs its familiar role in a familiar way. The undertaking of the combination is an easy one, aggregating wagers without losing track of the horse on which and the pool in which the wager was placed, or the TIM at which the wager was placed.

The obviousness of the system is most readily seen in Annex A. The combination of means presented by Claim 20 is an utterly simple aggregator of punched-in data. Every component is in its predictable place and does its -- in this field -- simple office simply." (A180 M142-143)

The idea of the system is simple; the simplicity is not that of discovered but obvious simplicity, and the means invoked are an obvious dictate of the simple end sought. (A188 M150-151)

Again, the subsystem claimed combines conventional components to perform a familiar assignment in a conventional way. (A195 M157)

No discovery is present here. Detail abounds, but ingenious novelty is not present. It is pedestrian circuitry that accomplishes its very simple goal of furnishing a pulse that tracks through a system . . . and, on circuit completion to origin, ticks the binary counter on to the emission of its next count signal. (A197 M159)

As in the case of Claims 20 through 25 no discovery is disclosed, only painstaking articulation of familiar means to perform simple error checks through use of circuitry suggested by the nature of the conventionally appropriate components that the tasks themselves pointed out as suited for the service. (A204 M166)

"... it represents ABC data processing." (A213 M175)

In a nutshell, "ABC data processing" is the conclusion of the technologically brilliant Judge Dooling. But only after the wisdom of hindsight decried by the Supreme Court in Graham and gained only from the teachings of the patent disclosure. He finds the claims invalid on their face without remotely considering the economic impact afterwards of the claimed subject matter as embodied in the First Tote.

The great bulk of the Lower Court's massive Memorandum is devoted to a brilliant display of an absolute mastery of what the Supreme Court in Johnston termed "the highly esoteric field of computer technology." 96 S. Ct at 1394, 189 USPQ at 258. Judge Dooling's obviousness inquiry effectively began and ended with what Digitronics had done. With that approach, he had no need to and did not make any specific finding of § 103's "time the invention was made." Whatever that time, it was then only "ABC data processing."

Judge Dooling seems to trace conception of the claimed inventions back to Digitronics' May 11, 1959 proposal (A835 DXF) of a "reasonably detailed specification for an essentially solid state electronic system covering the functions of a parimutuel system." (A41 M3-4) He describes the proposal in great detail at Memorandum pages 5-11 (A43). At page 60 (A98)

he refers to the "continuity of conception evinced in the succession of the May 11, 1959, presentation (Ex. F), the November 1959 outline of the planned prototype (Ex. 94A), and the February 1960 specification for the fully electronic totalizator (Ex. 94B);...."

Putting aside for now the seven indicia of nonobviousness (Point B) and the stringent legal criteria for both complete conception and reduction to practice (Point G), if the claimed inventions were just "ABC data processing" and if complete conception occurred by February 1960, then how is one to answer the following questions (other than to conclude that the inventions were not obvious):

(1) Why was it necessary to spend \$150,000 on a commercially incompetent prototype to determine feasibility of the electronic digital computer technique before Roosevelt's approval to build the experimental 100-TIM First Tote?

(A61 M23,33)

(2) Why Roosevelt's "shilly-shallying, the cutback in scale, the groping for cost savings and for a ceiling on costs that kept running out of hand....?"

(A105 M67)

(3) Why was it necessary to have in March 1963 a demonstration of an experimental 20-TIM First Tote? (A93 M55)

(4) Why did it take over four years, from February 1960 to May 1964, and a 25 day test period, to obtain the approval of the New York State racing authorities to process real daily double bets on the First Tote? (A377 PX21,22)

(5) And why didn't NYRA build its own totalisator based on the 1962 brochure (A473 PX120), rather than await the New York State approval of the First Tote in May 1964, before ordering its own?

(6) Why was the First Tote even called the First Tote if the claimed inventions were first completely conceived or reduced to practice in the prototype?

(7) And if the claimed inventions were so obvious, why did Judge Dooling require such a massive explanation to demonstrate that?

E. REFUSAL TO PERMIT PATENTEES TO EXAMINE DEFENDANTS' TOTALISATOR WITNESS ON § 103'S LEVEL OF "ORDINARY SKILL IN THE [PERTINENT] ART" -- REVERSIBLE ERROR PER SE

Judge Dooling refused to permit patentees to examine defendants' witness Ole Fosse on the level of ordinary skill in the totalisator art. (A1233 TR2153)

Mr. Fosse was defendants' fact witness on the state of the art as represented by Amtote's Model 7J hybrid electromechanical aggregator totalisator with the adjunct electronic digital price computer for calculating payoffs. (A281 F24-26) In July 1961 it was installed at NYRA's Aqueduct Raceway (A75 M37-38) and represented the state of the art at that time.

Mr. Fosse had been with Amtote for 35 years, except for service during World War II in the U.S. Signal Corps where, as a Captain, his principal duties were at depots for servicing communications equipment. (A1211 FoX1955-59) Fosse led the Amtote project in originating, designing and hardwiring a program for the Model 7J's adjunct digital price computer. Fosse had no patents and said he was only applying the state of the art to the problem. (A1218; A1234 FoX2130, 2160-64)

In sum, Amtote's Fosse is a person having ordinary skill in the totalisator art. He is skilled in both the electromechanical and electronic digital techniques,

but not skilled enough to be an inventor.

Patentees' counsel unsuccessfully pleaded with Judge Dooling to be allowed to examine Fosse on the level of ordinary skill in the totalisator art^{4a} (A1219 TR2139-2153) Pertinent portions of the dialogue follow.

MR. YUTER: I think it has a great deal of relevancy and I would like to have a few moments to explain that to you as best as I can.

In the [Graham] case, the Supreme Court stated the following:

"Under Section 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined."

Then it goes on about the secondary considerations. And then in our own Court of Appeals, Judge Learned Hand stated in Reiner --

THE COURT: Reiner, usually.

MR. YUTER: "The test laid down is indeed misty enough. It directs us to surmise what was the range of ingenuity of a person having ordinary skill in an art with which we are totally unfamiliar. And we do not see how such a standard can be applied at all except by recourse to the earlier work in the art and to the general history of the means available at the time. To judge on our own that this or that new assemblage of old factors was or was not obvious is to substitute our ignorance for the acquaintance with the subject of those who were familiar with it."

We have a very unique situation, your Honor, as far as patent suits are concerned.

I have always heard about the mythical man skilled in the art that we are supposed to create like the reasonable man. But I think this is the case at least, for me, it's unique in that we have in Mr. Fosse the average man skilled in the art. We don't have to conjecture about who this man is and what he would do.

And I think now that we have him here we can find out from him what was the level in 1961-62 of the skill in the parimutuel art at that time. And what we propose to do is -- and we would like to make an offer of proof, if you should exclude it, is to introduce into the record a whole sequence of prior art American Totalisator patents. And to the extent Mr. Fosse has any knowledge about them, I would like to have him explain them to the Court. And I think with that range we will then find at least working up to 1962 what the average man skilled in the art thought about various technologies and what his company thought was patentable....

THE COURT: Well, I don't know. I mean that that seems to suggest that you ought to ask Mr. Fosse what the applicants asked the Patent Office. The Patent Office granted the patent, which is -- as it is supported by statutory presumption of validity. I think if you -- I think the file history shows what classes were searched, what prior art

4a. Plaintiff made Fosse its own witness. (A1223 , TR2143-44)

was referred to. And I don't quite see where Mr. Fosse can help us. He has told us -- it's beyond what he's already told us. And I don't quite follow you in saying that he would know the level of the prior art. I don't quite know what you mean by that. *** So I don't think that when we look at Mr. Fosse, we are looking to the right kind of person skilled in the art or knowledgeable about the level of skill in the art when we are talking about the kind of art that we are talking about here.

So on that ground I would not think that further inquiry along these lines would be useful. (A1219 TR2139-2148) ***

MR. YUTER: First, it is our view that the art is the parimutuel totalisator art.

THE COURT: I couldn't agree with that. I don't think there is any parimutuel totalisator business. I think it is a totalisator-using field, and there are certainly firms, obviously, which specialize in distribution of totalisator equipment for parimutuel betting. But I wouldn't think it is anything except a specific application in one narrow field of manufacture. (A1230 TR2150) ***

MR. YUTER: ... American Tote was more than a construction company. By its own testimony here, and by the documents, they spent large amounts of money in research and development, apparently in part in-house, and apparently in part outside at MIT, at Potter, and apparently elsewhere. And they did a lot of design work, they did some very ingenious things.

I have to say this [Model 7J] system is very ingenious, it solved the problems that they had at the time --

THE COURT: I think the witness told us that, so did the patent office, but he hasn't told us whether it was ever challenged. (A1232 TR2152) ***

MR. YUTER: It is Plaintiff's view that in 1961 the art was the parimutuel totalisator art, that Am Tote as a group, as a fictional group, as an entity, was the man skilled in the art; that they had done research and developed improvements in their own system; that they experimented with electronic systems; that they spent, in their own words, hundreds of thousands of dollars, perhaps even each year, on research and development, and that in the absence of anyone else from Am Tote, Mr. Fosse is the only man we have to ask these questions. If he doesn't know the answers, he will tell us, but at least I would like to try.

THE COURT: No. I think I have ruled completely on that point. (A1233 TR2153)

Judge Dooling did admit the offered Amtote Patents (A514; A523; A753 FX148 and 148A-148M, 178) and six are referred to in Finding of Fact 20. (A279) Part of the testimony desired from Mr. Fosse by patentees was what was considered inventive in the patents of the leading totalisator developer,

Amtote. A sequence of such descriptions would have provided very relevant evidence on the level of skill deemed inventive by Amtote and its technical personnel. Having determined an average level of deemed inventive skill, it would follow that the actual level of ordinary skill was most probably lower than that deemed inventive. Such a finding would have been relevant to the Supreme Court's mandate in Graham, "the level of ordinary skill in the pertinent art resolved."

The combination of primordial errors -- disregarding Graham and determining the pertinent art to be data processing rather than the totalisator business -- led to the exclusion of testimony on such a crucial issue. But even if this Court decides that data processing is the pertinent art, Mr. Fosse was certainly skilled in the application of data processing to the totalisator business.

In either case, to exclude testimony on § 103's level of "ordinary skill in the [pertinent] art," especially in view of the Supreme Court's Graham mandate, is reversible error per se.

F. DEFENDANTS ADMITTEDLY ACQUIRED THE FEASIBILITY PROTOTYPE FROM ROOSEVELT, TO WHOM IT HAD BEEN TRANSFERRED WITH DRAWINGS, BUT DEFENDANTS DID NOT PRODUCE THE DRAWINGS OR TRACE OUT THE PROTOTYPE CIRCUITRY FOR THE TRIAL -- BURDEN OF PROOF OF THE FEASIBILITY PROTOTYPE DETAILS CONSTANTLY REMAINED ON DEFENDANTS AND IT WAS GROSSLY UNJUST AND REVERSIBLE ERROR FOR THE LOWER COURT TO INVALIDATE THE CLAIMS BECAUSE PATENTEES COULD NOT FIND ALL OF THE DRAWINGS OR "ADEQUATELY" EXPLAIN WHY

Judge Dooling invalidated Claims 20-27 because patentees could not find a set of feasibility prototype drawings or "adequately" explain why.

(A293 F47)

"When the prototype was transferred to Roosevelt Raceway, a set of the drawings went with it, and perhaps the originals...." (A88 M50)

Defendants later acquired the feasibility prototype (also called "demonstrator") and during the trial had it at their offices in Newark, Delaware. That is admitted at A1325 TR3437:

MR. YUTER: ... I don't know if it's in the record, the fact that the defendants now have the demonstrator in their possession. They've had it for some time; is that correct?

MR. ISNER: No argument about that.... It was found in a storeroom out at Roosevelt. Components, not the whole thing. It's down in Delaware and Mr. Yuter is invited to come down and see it. There has been no secret about this.

THE COURT: I think Mr. Yuter's point is that it is at least as good as the records or drawings.

The Hohmann ticket issuing machines were not in the possession of defendants but (accused infringer, A1427) Amtote. At A1327 TR3439-3441:

MR. YUTER: With the Hohmann ticket issuing machines also with it?

MR. ISNER: I saw them at Roosevelt. They're not down in Newark, though. They were not shipped for some reason.

THE COURT: They are still at Roosevelt?

MR. ISNER: No, I think -- I think American Tote has them to be perfectly candid. They were the ones that owned the stuff as it turned out later. They had bought -- well, they had bought the [First Tote] or -- I won't say bought it. They took title to the [First Tote] and all the related equipment so apparently they owned whatever this prototype or what was left of it and I was out there.

I saw it in the storeroom underneath Roosevelt Raceway at one time. We located it and the Hohmann machines or what I later found out to be the Hohmann machines were there.

When the time came to ship it down to Delaware, they were not shipped along with it. The Hohmann machines, I know, are in the possession of Amtote and if you want to look at them, we can probably get them. They look like the photographs.

THE COURT: In the possession of Amtote but not at their Roosevelt Raceway facility?

MR. ISNER: No, I think, as a matter of fact, I think they were brought up for possible use here and we decided not to do it. So -- they look just like the photographs.

MR. YUTER: But the point is that that would be easy to trace out, your Honor. It's a very simple -- the circuitry in the ticket issuign [sic] machine would be very easy to trace out to see whether, for example, there is a rejection signal responsive means.

MR. ISNER: You put your evidence in on it, Mr. Yuter. You put the drawings in.

And Digitronics did locate and put into evidence the crucial TIM circuit drawing PX100 (which was found at Digitronics' patent counsel offices in the file of a patent application on the Hohmann TIM). (A449 PX99)

An exhaustive posttrial investigation by Digitronics to locate the missing drawings of the feasibility prototype was unsuccessful. Apparently the prototype drawing numbers were changed, which most probably explains why they could not be located by IOMEC Corporation, the assignee of Digitronics' business. See Weida affidavits dated November 6, 1975, pars. (6) and (12) and December 10, 1975, par. 22. (A1368; A1374)

Defendants have admitted that Amtote made available to them the Hohmann TIMs but defendants chose not to produce them at the trial. There the TIM circuit drawing PX100, as corroborated by the TIM patent PX99, could have rapidly been checked. Instead, defendants had informed Digitronics that they would rely on the prototype discovery. To quote defendants' counsel's letter to patentees' counsel dated November 11, 1974 (A1398 Exhibit B of Yuter affidavit dated December 10, 1975) (A1391):

In view of the testimony and admissions elicited to date concerning the correspondence between the structure and mode of operation of the demonstrator unit and the claims of the Weida patent, we do not intend to trace out the circuits of such unit for use at the trial.⁵

At that point, patentees' counsel had concluded that there was no need to locate the prototype drawings. (A1391 Yuter affidavit, pars. (2)-(4))

5. It is the view of the patentees that the task of tracing the circuitry would have been painstaking but not enormous. (See A98 M60)

Weida's oral testimony on the details of the prototype was characterized by Judge Dooling as of "unshrinking frankness." (A99 M61) The unshrinking frankness of Weida's testimony supported by the Hohmann TIM circuit drawing (A468 PX100), the corroborative Hohmann TIM patent (A460 PX99, sheet 12) and keyboard photos (A471 PX103, 104) and the fact that defendants did not produce the Hohmann TIMs at the trial or trace out the pertinent prototype circuitry but chose, instead, to rely on discovery testimony and admissions, prove that the Hohmann TIMs did not have reject signal responsive means, only a manual clear key (A1132 TR1107-1109, A471 PX103, 104; A1136 TR1111-1112, A469 PX101; A1180; A1240 TR1752-1753, 2246-2246a, A432 Section 5 of PX94A), nor did the prototype electronically signal an "unlatch" for rejection (A1145; A1180 TR1160, 1183, 1752-1753; A449 PX99, 100), nor did the prototype interrogate the TIMs (A1143; A1240; A1251; TR1153-1154, 1183, 2246, 2320-2323; A449 PX99, 100). PX94-A, Paragraph 1.3 ("Daily Double and regular betting are not simultaneous") (A434) together with the indicator display panel photo (A470 PX102) prove that the feasibility prototype could not handle regular and daily double betting simultaneously (A1131; A1134 TR1106-1107, 1109-1111; A470 PX102; A1144; A1239 TR1154, 1183, 2245-2246). Since one Hohmann TIM was used only for daily double betting (A471 PX103) and the other only for regular betting (A472 PX104), no TIMs were demonstrated simultaneously (A1142; A1177; A1184; A1255 TR1152, 1624-1625, 1814-1815, 2354-2355).

There is no evidence to controvert any of the above facts.

Although somewhat technical, the relationship between the feasibility prototype and the claims can be briefly summarized as follows: (1) there was no "plurality of ticket issuing machines" as required by Claims 20-25 (A360 PX10); (2) there was no "rejection signal responsive means for unlatching any latched switches" as required by Claims 23 and 26-27; (3) there was no "interrogating means" for interrogating the ticket issuing machines as required by Claims 24 and 25. In sum, Claims 20-27 clearly do not read on the feasibility prototype; but they were invalidated by Judge Dooling "in light of plaintiff's failure to make disclosure of the details of the device or adequately to explain its inability to do so." (A293 F47)

That was grossly unjust for at least any of three reasons. First, defendants were at least equally at fault in failing to produce evidence of the details of the feasibility prototype they had in their own possession. Second, they represented before the trial that they would rely on the details of the prototype brought out in pretrial discovery. Third, the prototype is an affirmative defense and, if the statutory presumption of validity means anything, it means that the burden of proof remains constant on the defendants.

In construing the presumption of validity provided by 35 U.S.C. § 282, now Justice Stevens, then speaking for the Seventh Circuit Court of Appeals, recently held that the burden of proof is constantly on the party attacking validity. Chicago Rawhide Mfg. Co. v. Crane Packing Co., 523 F.2d 452, 458, 187 USPQ 540, 545 (7th Cir. 1975). Also see the decision of now Justice Stevens, supported by retired Associate Justice Clark, in CTS Corp. v. Piher International Corp. 527 F.2d 95, 188 USPQ 419, (7th Cir. 1975). The presumption of validity requires that reasonable doubt

on the question of validity be resolved in favor of the patent holder. Gross v. JFD Mfg. Co., Inc., 314 F.2d 196, 198, 137 USPQ 1, 3 (2d Cir. 1963), cert. denied, 374 U.S. 832, 137 USPQ 913 (1963).

And, to put it bluntly, if there is any suggestion that patentees either destroyed evidence of the feasibility prototype or did not want to find the evidence, the latter suggestion should be negated by patentees' exhaustive posttrial search for the drawings (A1365 Weida affidavits). The former would be stupid because the prototype remained available outside of Digitronics' control (to the point where defendants were able to acquire it), and with a set of drawings to permit it to be serviced. Where that set of drawings went, Digitronics does not know, but they should have been with the feasibility prototype when the defendants acquired it.

With respect to any drawing which may have been in Digitronics' hands in 1963, the spectacular success of the March 1963 20-TIM demonstration (A93 M55) immediately made the feasibility prototype useless as a demonstrator. The prototype was a one-shot effort to determine feasibility of the electronic technique to solve the racetracks problems. (A75 M37) There was no interest in duplicating it so no drawings were required for that purpose. Its questionable value as a sales aid (no sale was ever made from it) became zero with the advent of the successful 20-TIM First Tote demonstrator in March 1963. The feasibility prototype was relegated to a Roosevelt storeroom and was later acquired by (accused infringer) Amtote (A1427) when Amtote acquired the First Tote. (A1327 TR3439-3441)

This action was filed in November 1967. It was not until March 1972 that defendants found time to go to Digitronics' plant and look for relevant documents.

Between March 1963, when the feasibility prototype became useless, and March 1972 is a nine-year period in which, with various Digitronics moves, any prototype drawings could easily have been thrown out. It is defendants' fault that they did not begin their discovery in 1967 when drawings might still have been at Digitronics.

Surely, it is an "adequate" explanation of Digitronics' inability to find the drawings that the need for them evaporated over nine years earlier.

In sum, it was grossly unjust and reversible error for Judge Dooling to invalidate Claims 20-27 because of Digitronics' inability to find the drawings of the feasibility prototype (an affirmative defense) or "inadequate" explanation of its inability to do so.

With respect to Claims 20-22, Judge Dooling adopted Weida's testimony of "unshrinking frankness" (A99 M61) that there was no plurality of ticket issuing machines in the prototype, only a plurality of simulated TIMs (SIMs) which could not issue tickets. (A97 M59) There were two Hohmann TIMs, a regular betting TIM and a daily double TIM; since the prototype could not process both regular and daily double betting at the same time, only one could be used at a time. (A1144 WeD1154, 1183). But Judge Dooling stated that the SIMs "while not genuinely TIMs, would appear from the point of view of their model or demonstration roles to qualify as valid models of 'plurality'; their existence is not otherwise justifiable." (A97 M59)

The Constitutional Provision underlying the patent laws is Article I, Section 8. "The Congress shall have power . . . To promote the . . . useful arts," The drafters were practical people. Simulated ticket issuing machines that cannot issue tickets hardly promote the useful arts and are not practical.

Moreover, the lack of ticket issuing machines for a totalisator only serves to emphasize that the feasibility prototype was "commercially incompetent." (A103 M65) And Judge Dooling did find that the "prototype was not practically operable as a racetrack totalisator...." (A102 M64)

While the Claims 20-22 question of "plurality of ticket issuing machines" can be viewed as a close one, at least the doubt should be resolved in patentees' favor to the point where the issue is not one of novelty under 35 U.S.C. § 102 but obviousness under § 103. If this Court agrees, then the many indicia of nonobviousness (see Point A) should easily weight the scales on the validity side with respect to Claims 20-22 and the feasibility prototype.

**G. FEASIBILITY PROTOTYPE WAS NOT A PRIOR INVENTION AND
THUS IS NOT PRIOR ART BECAUSE, BEING COMMERCIALY
INCOMPETENT, IT WAS NEVER REDUCED TO PRACTICE**

In response to defendants' motion to amend the judgment to declare "Claims 20-27 invalid because they were not the invention of the patentees," Judge Dooling stated (A298 Memorandum and Order of January 13, 1976, page 2, A299):

The point is that none of the patentees contributed to the Demonstrator or prototype. The article of the patent could not be found, on the evidence, to have been patentable over the Demonstrator, and, on the evidence, the Demonstrator was critical prior art.

Under 35 U.S.C. § 102(g), to be a prior invention requires that "[i]n determining priority of invention there shall be considered... the respective dates of conception and reduction to practice of the invention..." Without reduction to practice there is no prior invention. And there can be no reduction

to practice until an invention has "been tested sufficiently to verify that it is operable and commercially marketable." See Timely Products Corp. v.

Arron, supra, 523 F.2d at 302, 187 USPQ at 267-268, where District Judge Connor, speaking for this Court, stated:

We accordingly conclude that Section 102(b) bars an application for patent filed more than one year after the solicitation of an order for a specific article to be produced later, where the following requisites are present:

(1) The complete invention claimed must have been embodied in or obvious in view of the thing offered for sale. Frantz Mfg. Co. v. Phenix Mfg. Co., 457 F.2d 314, 320-21, 173 USPQ 266, 270-271 (7th Cir. 1972); Tool Research & Engineering Co. v. Honcor Corp., 367 F.2d 449, 454, 151 USPQ 236, 241-242 (9th Cir. 1966), cert. denied, 387 U.S. 919, 153 USPQ 888, reh. denied, 389 U.S. 783 (1967)....

(2) The invention must have been tested sufficiently to verify that it is operable and commercially marketable. This is simply another way of expressing the principle that an invention cannot be offered for sale until it is completed, which requires not merely its conception but its reduction to practice. Hobbs v. U.S. Atomic Energy Commission, 451 F.2d 849, 859, 171 USPQ 713, 719-720 (5th Cir. 1971).

(3) Finally, the sale must be primarily for profit rather than for experimental purposes. In re Yarn Processing Patent Validity Litigation, 498 F.2d 271, 277, 183 USPQ 65, 68-69 (5th Cir. 1974), cert. denied. See also Dart Industries, Inc. v. E. I. duPont de Nemours & Co., supra, 489 F.2d at 1366, 179 USPQ at 397.

Also see Cali v. Eastern Airlines, Inc., 442 F.2d 65, 71, 169 USPQ 753, 757 (2d Cir. 1971). The prototype, therefore, being commercially incompetent was never reduced to practice.

In concluding that there was no prior sale or use of the feasibility prototype under 35 U.S.C. § 102(b), Judge Dooling made the following Findings of Fact:

.... The demonstrator or prototype was not practically operable as a racetrack totalisator; nor was the use, if public, a use of the article of the patent rather than the use of an illustrative but commercially incompetent prototype of the article of the patent, and it was not a use for the purposes to be served by the article of the patent but a use in order to demonstrate the validity of the scheme of the article of the patent. (A102 M64-65)

In rejecting the argument that there was a future sale of the First Tote on August 1961, Judge Dooling stated (at A103 M65-67) that the brochure

... relates to the idea that there can be a sale of future goods that is disabling under Section 102(b) if ... at minimum, it has been reduced to practice in some reliable, complete manifestation ... where there is no fully operative device in existence, a finding that the article of the patent had been put on public sale could rarely be warranted.... Roosevelt Raceway's shilly-shallying, the cutback in scale, the groping for cost savings and for a ceiling on costs that kept running out of hand, these fluid factors combine to preclude a finding that there was an August 1961 contract to sell the First Totalisator as an article complete in design, specification and detailed drawings and adequately exemplified as a feasible device by the prototype. Without such a finding, it cannot be held that there was a disabling contract to sell within the meaning of 35 U.S.C. 102(b).⁶

The feasibility prototype was never reduced to practice because it could perform no useful work in its intended environment, the racetrack. To quote the 5th Circuit in 1974 in In re Yarn Processing Validity Litigation at 498 F.2d 271, 280, 183 USPQ 65, 71, cert. denied, 419 U.S. 1057, 184 USPQ 65 (1974):

The invention***[must have]*** been tested so far as to make sure that it will operate under service conditions.***[A] test under service conditions is necessary in those cases, and in those cases only, in which persons qualified in the art would require such a test before they were willing to manufacture and sell the invention, as it stands." ***Sinko Tool & Manufacturing Co. v. Automatic Devices Corp., 2 Cir., 1946, 157 F.2d 974, 977, 71 USPQ 199, 202-203.***

Actual performance is required of the function for which the machine is intended with a quality, extent, and character of operation sufficient to indicate its utility in the environment in which it is contemplated to be useful. ***

6. In referring to the brochure earlier in the paragraph, Judge Dooling stated: "if it discloses an invention... that is final: it is either (or both) prior art against the patent (Section 102(a)), or a disabling printed publication (Section 102(b))." But he makes no finding that the brochure discloses any of the claimed inventions (See A78 M40-46 and A289 F41-42), no doubt because the brochure discloses no means to enable practice of any claimed invention. Rich Products Corp. v. Mitchell Foods, Inc., 357 F.2d 176, 148 USPQ 522 (2d Cir. 1966), cert. denied, 385 U.S. 821, 151 USPQ 757 (1966).

See generally 1 Deller's Walker on Patents, § 46 (2d ed. 1964); 69 C.J.S. Patents § 87 (1951).

Thus the legal definition of the date of reduction to practice appears to equate it precisely with the end of the experimental period for purposes of § 102(b).

To quote Western Totalizator's Mr. Lease in July 1960 (A426 PX86-4):

The prototype that is now being built by Digitronics has a maximum capacity of only 16 T. I. M. s Men like yourself and Mr. Tannenbaum, who have made tremendous, applaudable progress in the harness racing field, can fully appreciate that the functioning of an electronic totalizator, when tied into 400 machines, could very well produce unacceptable results. It is much like a horse who can run very well carrying 105 pounds but cannot perform as well when carrying 135 pounds. It is unfortunate, therefore, that the possibility of failure cannot be established by testing the prototype that is now being built by Digitronics.

As late as December 1962, Amtote was warning "that any new device would require far more testing than nontechnical people appreciated, and that this was particularly true of equipment needed for racetrack use...." (A91 M53)

Thus, for the feasibility prototype to be reduced to practice required a successful test under service conditions at a racetrack. No such test was even contemplated. Accordingly, any completely conceived invention in the feasibility prototype was never reduced to practice.

The claimed inventions were reduced to practice in the First Tote about May 1, 1964 (A1107 WeD535), and the feasibility prototype design was never reduced to practice. Judge Dooling reversibly erred when he concluded that the prototype was a prior invention.

Moreover the claimed inventions were not even completely conceived until late 1962 when it was decided to stage the demonstration of the experimental 20-TIM First Tote in early 1963.

In Mergenthaler v. Scudder, 11 App. D. C. 264 (1897), conception of an invention was defined as follows:

... The conception of the invention consists in the complete performance of the mental part of the inventive act. All that remains to be accomplished, in order to perfect the act or instrument, belongs to the department of construction, not invention. It is therefore the formation, in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is thereafter to be applied in practice, (Emphasis in original).

This definition has been repeatedly cited with approval by the Court of Customs and Patent Appeals, an expert on this subject. For example, in Bac v. Loomis, 252 F.2d 571, 577, 117 USPQ 29, 34 (CCPA 1958), the CCPA explained:

The party claiming conception of an invention must show that it was complete and operative and such as would enable a person skilled in the art to reduce the conception to practice without any further research or exercise of the inventive skill. . . . (Emphasis in original.)

The CCPA also noted that "... vital and extensive developments were necessary, after Loomis' disclosure was made, to put the idea into practice." This was in a similarly complex electronic technology -- determining the position of a craft by means of impulses emitted by radio transmitters (LORAN). In remarkably apropos language the CCPA concluded, at 252 F.2d 577, 117 USPQ 34:

It may be that the necessity for a certain amount of selection of sizes of parts, materials, etc., along predetermined lines does not necessarily negative a complete conception of an invention, but where, as here, an elaborate program of research, experimentation and design of parts is necessary before an operative apparatus can be produced, it cannot properly be said that a complete conception of an invention within the meaning of the patent laws has been attained.

In our opinion, what Loomis thought of and disclosed in the fall of 1940 did not amount to a conception of the invention here involved, since it clearly was not a completion of the mental part of the inventive act. While it appears that Loomis' suggestions set in motion the program which eventually led to the successful practice of the invention, that result was achieved only after almost two years of vigorous research and experimentation, and was made possible by the incorporation of the ideas of other persons.

Similarly, following the 1961 feasibility prototype, there was a two-year elaborate program of research, experimentation and design of parts before the First Tote was experimentally operative. While the designers of the feasibility prototype set in motion the program which eventually led to the successful practice of the claimed inventions, that was only made possible by the incorporation

of the ideas of other persons. But the prototype designers deserve credit for their incomplete conceptions which were completed in the First Tote. They were, effectively, part of the First Tote inventor team. But no claimed invention was ever completely conceived by the prototype's designers, let alone reduced to practice.

There is a prima facie presumption that the claimed inventions were conceived by the named patentees. Plantronics, Inc. v. Roanwell Corp., 403 F.Supp. 138, 187 USPQ 489 (S.D.N.Y. 1975).

Judge Dooling's conclusion that the prototype was a prior invention is clearly reversible error.

H. INITIAL DESIGNERS OF THE FEASIBILITY PROTOTYPE ARE JOINT INVENTORS OF THE FIRST TOTE AND SHOULD BE ADDED TO THE PATENT UNDER 35 U.S.C. § 256

Although no claimed invention was completely conceived or reduced to practice in the feasibility prototype (Point G), Shaw and Kielsohn, the initial designers of the feasibility prototype, made original contributions to the complete conception and reduction to practice of the First Tote by virtue of their ideas for the initial design of the prototype. (A95 M57) Shaw and Kielsohn, therefore, are joint inventors of the First Tote and they may be added to the patent pursuant to 35 U.S.C. § 256 irrespective of whether Weida made any joint inventive contributions to the feasibility prototype.

35 U.S.C. § 256 (1954) provides in pertinent part:

Whenever a patent is issued and it appears that a person was a joint inventor, but was omitted by error and without deceptive intention on his part, the Commissioner may, on application of all the parties and assignees, with proof of the facts and such other requirements as may be imposed, issue a certificate adding his name to the patent as a joint inventor.

The misjoinder or nonjoinder of joint inventors shall not invalidate a patent, if such error can be corrected as provided in this section. The court before which such matter is called in question may order correction of the patent on notice and hearing of all parties concerned and the Commissioner shall issue a certificate accordingly.

§ 256 shows a desire on the part of the legislators to minimize disputes over the question of whether or not an invention is joint. Monsanto Co. v. Kamp, 269 F. Supp. 818, 824, 154 USPQ 259, 262 (D.D.C. 1967); Hamilton Cosco, Inc. v. Century Products, Inc., 305 F. Supp 1271, 1272, 163 USPQ 567, 568 (N.D. Ohio 1969); see, Application of Schmidt, 293 F. 2d 274, 279, 130 USPQ 404, 408-409 (CCPA 1961).

In De Laski & Thropp v. Thropp, 218 Fed. 458, 464 (D.N.J. 1914), aff'd, 226 Fed. 941 (3d Cir. 1915), joint inventorship was defined as follows:

In order to constitute two persons joint inventors, it is not necessary that exactly the same idea should have occurred to each at the same time, and that they should work out together the embodiment of that idea in a perfected machine. The conception of the entire device may be due to one, but if the other makes suggestions of practical value, which assisted in working out the main idea and making it operative, or contributes an independent part of the entire invention, which is united with the parts produced by the other and creates the whole, he is a joint inventor, even though his contribution be of comparatively minor importance and merely the application of an old idea.

In the Third Circuit's affirmance of the District Court, Judge Woolley, a leading authority in the field,⁷ stated at 226 F. 949:

In a machine containing as many elements as this one, it is not to be thought nor by the law required, that the inventive conceptions of two inventors shall develop simultaneously. One may conceive a general or imperfect outline of an entirely novel thing, which, without the conception of another developing it and giving it body, might never amount to invention; but if the conceptions of one supplement and complement the conceptions of the other, the result might be invention and therefore joint invention.

7. According to Judge Holtzoff of the District Court of the District of Columbia in Monsanto Co. v. Kamp, 269 F. Supp. 818, 824, 154 USPQ 259, 262 (D.D.C. 1967).

That description fits exactly the facts in this case. The feasibility prototype was an imperfect outline of an electronic totalisator and it took first Weida by himself to correct the blunders in logic detail and implementation. (A99 M-61-62) Then it took the subsequent inventive efforts of the five named inventors including Weida to supplement and complement the initial incomplete conception of Shaw and Kielsohn to complete the conception of the First Tote.

In 1967, Judge Holtzoff, citing the above criteria of joint invention with approval, defined it as follows in the Monsanto case, at 269 F. Supp. 824, 154 USPQ 262:

A joint invention is the product of collaboration of the inventive endeavors of two or more persons working toward the same end and producing an invention by their aggregate efforts. To constitute a joint invention, it is necessary that each of the inventors work on the same subject matter and make some contribution to the inventive thought and to the final result. Each needs to perform but a part of the task if an invention emerges from all of the steps taken together. It is not necessary that the entire inventive concept should occur to each of the joint inventors, or that the two should physically work on the project together. One may take a step at one time, the other an approach at different times. One may do more of the experimental work while the other makes suggestions from time to time. The fact that each of the inventors plays a different role and that the contribution of one may not be as great as that of another, does not detract from the fact that the invention is joint, if each makes some original contribution, though partial, to the final solution of the problem.

In U. S. Industries, Inc. v. Norton Co., 184 USPQ 187 (N.D.N.Y. 1974), a nonjoined inventor in earlier work with a named inventor failed to produce a completely satisfactory product. Thereafter, the named inventor plus a second named inventor who had no contact with the original project perfected the product. The infringer's argument was that the earlier work represented prior art and thus the patent failed to be a significant advance, or the patent was invalid on its face for failure to name the nonjoined inventor.

In holding that the patent was correctible, the Northern District Court stated (at 184 USPQ 187) that 35 U.S.C. § 256

... is meant to allow the correction of honest mistakes. It is essentially an equitable rule which says that patents should not be invalidated for technical reasons which do not harm either the public or individual litigants, and where the moving party has obtained no fraudulent gain.... This is the heart of § 256 and, indeed, it is difficult to interpret the language of § 256 or its earlier companion § 116 without seeing that 'deceptive intent' and 'evil motive' was what Congress meant to be searched for and discouraged.... Congress meant to legislate a remedial statute in order to allow and encourage the correction of patents rather than punish and discourage an honest correction; and the courts so interpret them to protect the public as well as the valid claims of patentees.

Note that the inventive conception of the three joint inventors did not develop simultaneously. In fact two of the three joint inventors made their contribution during completely different periods.

In the hurried drafting of the Weida patent application, the patent draftsman Camil P. Spiezens was not aware of the feasibility prototype. (A93 M55-57) Consequently, the failure to add Shaw and Kielsohn as joint inventors was surely an honest mistake, which should be corrected because Shaw and Kielsohn made original contributions to the conception of the claimed inventions.

Conception in the patent law is defined in I Walker, Patents § 45 (Deller's 2d ed.) at 191-92 as

the formation in the mind of the inventor of a definite idea of a complete and operative invention as it is thereafter to be reduced to practice.***

The date of conception is the date when the inventive idea is crystallized in all of its essential attributes and becomes so clearly defined in the mind of the inventor as to be capable of being converted to reality and reduced to practice by the inventor or by one skilled in the art.

For a conception to be complete and operative, the conception must be reducible to practice without any further research or exercise of the inventive skill. Bac v. Loomis, supra.

The Shaw-Kielsohn feasibility prototype design received by Weida at the beginning of September 1960 was incomplete and inoperative. (A99 M61-62, F40) Further research and inventive skill were required before Weida, two and one-half months later, got the equipment incompletely working for regular betting and about another month for incomplete doubles betting. (A1138 WeD1147-50) The prototype was not finally completed until mid-April 1961 (A69 M31, F 961 DXBZ-23), over seven months after the initial construction in September 1960.

Neither Shaw nor Kielsohn had a complete conception of the feasibility prototype. It required a lot of hard work and additional logical design by Weida to complete the prototype design to the point where it worked satisfactorily for feasibility demonstration purposes. (A1138 WeD1147-50)

Surely, Weida's contributions in completing the feasibility prototype, including the correction of blunders in logic and implementation (A99 M61-62), at least reached the joint inventive threshold of "suggestions of practical value which assisted in working out the main idea and making it operative." DeLaski & Thropp v. Thropp, supra. So if this Court should conclude that claimed inventions were completely conceived in the prototype, then Weida is surely a joint inventor and properly is named as an inventor in the patent. In that event, Shaw and Kielsohn can be added to the patent on that basis under 35 U.S.C. § 256, in order to save the patent.

The Lower Court's conclusion that Weida was not a joint inventor of the prototype no doubt reflects its primordial error that the pertinent art was data processing rather than the totalisator business, compounded by its derivative error that all that was done was "ABC data processing." With that approach it is not surprising that Judge Dooling erroneously concluded that Weida's contributions were not jointly inventive.

I. HOW THE NOVEL CLAIMED INVENTIONS SOLVED THE PRIOR ART RACETRACK TOTALISATOR PROBLEMS AND SATISFIED THE LONG-FELT NEED FOR ECONOMICALLY AUTOMATED DAILY DOUBLE BETTING

In July 1960 a critic of Digitronics, Mr. Lease of Western Totalizator, made the following statement in a letter to Roosevelt Raceway:

In all fairness, I must say that Digitronics' new technique of affecting a differential sequence access to the same memory for computational procedure is remarkable, if and when it can be done. However, it is new only if coupled with electronic aggregating equipment. If they are able to perfect this phase electronically, they are going into the wrong business. The opportunities in the computer field are a thousand times greater. (A426 PX86-4)

In other words, if Digitronics could solve the 1960 racetrack totalisator problems by providing access from each of a number of ticket issuing machines (TIMs) to the same bet aggregating electronic memory for computation of betting data, that would be new and remarkable, but they were going into the wrong business.

Nevertheless, with the cooperation of Roosevelt, Digitronics did go into the totalisator business and, in March 1963, achieved a spectacular success with its 20-TIM First Tote experimental demonstrator. (A93 M55) The patent "specification was drawn from the 20-TIM First Tote and reflects its electronic makeup." (A161 M123) Claims 20-22 and 24-25 (A360 PX10) specifically define the "new and remarkable" solutions to the 1960 racetrack totalisator problems.

(1) Heart of the First Tote -- Multi-Function Generating Means For Generating Signals Representing the Particular Ticket Issuing Machine (TIM)

"Differential sequence access to the same memory for computational procedure.... coupled with electronic aggregating equipment" was successfully done by the First Tote inventors by independently generating a sequence of signals representing a sequence of numbers and then assigning each ticket issuing

machine one of the numbers as its address. That is the heart of the First Tote, the TIM number signal generation means (Claim element 20(B)), and it had never been done before.

The TIM number signal generation means serves a multiple function.

First, the TIM numbers are generated at electronic digital counter speed which permits each TIM to be electronically "scanned" at high speed to see if it has a bet to be processed. Since the address of each TIM is the generated TIM number or count (A192 M154), each TIM is immediately and positively located.

Second, TIM number signal generation permitted the use of the then well-known magnetic core memory, as a TIM memory, to store the number of bets made at each TIM. The same TIM number is used as the address of the location in the TIM memory which stores the number of bets made on that TIM. (A186 M148) The TIM memory was also completely new in the totalisator art.

Third, since the same independently generated number is used both for the address of the TIM being served and the address of its TIM memory location, they are completely coordinated and there is no room for mistake. (A1011 WeD196-97)

Most importantly, a similar magnetic core memory was completely compatible with the rest of the system for use as the electronic aggregators for aggregating the number of bets made on each horse.⁸ (A186 M148-49)

8. The magnetic core memory was well known at the time of the patent application in March 1963. It consists of a multiplane matrix of magnetic cores. (They look like miniature Life Savers.) See one in the palm of a hand in PX12, A370. Each magnetic core by magnetization in one direction, say clockwise, from a wire passing through its hole, can "remember" the digit "1". By reverse, or counter-clockwise, magnetization it remembers the digit "0". A sequence of "1"s and "0"s in binary arithmetic can represent any decimal number. A memory location can store a sequence of binary digits in a row of cores. The memory location is specified in binary notation by an "address" corresponding to the wire passing through the holes of the cores in that row in a given plane in the multiplane matrix. Binary numbers can be "written" into a memory location or "read" out of a memory location by a separate second wire passing through the hole of each core. A running total can be maintained, for example bets on specific horses or by specific TIMs, by reading out the old total, adding one, and writing in the new sum in the same memory location.

The heart of the First Tote is defined by Claim 20 and specifically claim element 20(B). (A360 PX10) Element 20(B), in part, recites "generating means... for generating signals... representing the particular ticket issuing machine."

TIM number signal generation means was completely new in March 1963 when the patent application was filed, and Judge Dooling so found. In discussing the principal prior art patent, Handley patent DXBQ (A945), he stated: "Handley does provide scanning means of the required kind unless the scanning means must generate a TIM number...." (A235 M197)

The other principal prior art item is the Amtote Model 7J hybrid electro-mechanical aggregator totalisator with the add-on solid state digital price computer, then installed at NYRA's Aqueduct Raceway. Judge Dooling called it the "Aqueduct Totalizator System." (A238 M200) "The Aqueduct totalizator did not have means to record the number of bets placed at each TIM and, thus could not be said to respond to Claim 22." (A238 M200-201) Claim 22, which incorporates by reference all of Claim 20, defines the TIM memory which is responsive to the TIM number signal generation means (of Claim 20(B)) to store the number of bets made at each TIM. Thus, the TIM memory was also found novel.

With respect to Claim 21, Judge Dooling stated: "Like Handley, it does not exhibit claim elements 21(C) and 21(E)...." (A239 M201) Claim 21, which also incorporates all of Claim 20, defines the electronic aggregating equipment for aggregating the bet totals, in response to Claim 20(B)'s "signals representing the entry." Judge Dooling construed both Claims 21 and 22 as comprising magnetic core memories. (A185 M147-149)

In sum, Judge Dooling found that Claims 20-22 include novel elements. In Graham terms, he ascertained "differences between the prior art and the claims at issue." 383 U.S. at 17, 148 USPQ at 467. That moved the focus of inquiry to § 103 where "indicia of obviousness or nonobviousness may have relevancy." In this case the indicia of nonobviousness are so overwhelming as to almost dictate a conclusion that Claims 20-22 define invention.

But there is even more evidence of invention -- the many advantages of the Claims 20-22 System, especially the automation of daily double betting.

And there is still more evidence of invention -- the complete novelty of the First Tote as the first all-electronic totalisator wanted so long by the totalisator business.

And there is yet still more evidence of invention -- although synergism is not required for a combination including new elements, the synergistic results of the TIM number generating means enhance invention.

(2) How Daily Double Betting Was Economically Automated by the Claims 20-22 Invention

In June 1964, when NYRA was still using the Amtote Model 7J hybrid totalisator at Aqueduct, NYRA's experts emphasized the prior art problems in an "Evaluation of Mechanization Proposals" by Arthur Young & Company. Among the criticisms of the Aqueduct totalizator were the following (A395 PX38 - fifth and sixth pages):

Your present system has a number of limitations which result in manual operations, and involve substantial risks. The design of much of the present system is outmoded, in that alterations to make it more automatic become cumbersome. The system appears to be expensive relative to alternative systems. Also, your present contract will expire in the time that would be required to implement another manufacturer's system.

This year, the total handle of the NYRA tracks is expected to be \$656 million over a 234 day season. Operation normally will involve rotation among Aqueduct, Belmont and Saratoga tracks, with a total of six moves per season. The present system is owned and leased to NYRA by American Totalisator Company. The charges to NYRA for the system this year are budgeted at \$1,450,000.

In the present system, the daily double operation is completely manual. Sheets printed at each doubles ticket issuing machine (referred to as DIM) are manually removed and transported by pneumatic tube to the calculating room. There they are summarized, and odds and prices computed manually. This degree of human intervention, under time pressure, involves an inordinate risk of error. There is also a tendency to discontinue doubles betting earlier than it might be stopped under an automated system. These DIMs are charged at the rate of \$8 per day each, in addition to regular charges, and cannot be operated as regular ticket issuing machines (referred to as TIM)....

The present totalisator central equipment is electromechanical in nature. Thus, it is similar in many ways to some telephone central office equipment. It has been developed to a high degree of reliability, but it is slow and inflexible. As a result, the totalisator has a built-in program and can be used only for the purpose for which it was designed. This equipment, and the computers proposed for use with it, cannot perform accounting and other functions now done by the IBM 1401, nor can they produce a machinable input for the 1401. Thus, any data that could be captured during racing operations for later processing must now be re-entered manually.

In sum, the epitome of the prior art totalisators, the Amtote Model 7J representing the state of the totalisator art prior to the First Tote, was relatively expensive, slow, inflexible and, being incapable of daily double operation, resulted in an inordinate risk of error and a tendency to discontinue doubles betting earlier than it might be stopped under an automated system.

Roosevelt agreed. (A1089 LyX376-81) And for Roosevelt's parimutuel manager, the manual daily double was one of the worst parts of his job and he was always tickled to death when the daily double was over. (A1095 LyX382) It was a burden which he wanted to get rid of, and he asked Amtote many times to "get rid of some of the paper work for us;" but Amtote never came through with any way to satisfy the need to automate the daily double. (A1087 LyX371)

Amtote's failure to automate daily double betting was a matter of economics. To add daily double to the Amtote electromechanical aggregators would require three times as much equipment. It wasn't worth it. (A1216 FoX2103-2105) And the racetracks suffered.

The Claims 20-22 Invention solved all of NYRA's electromechanical tote problems. It is faster, more compact, more accurate, more flexible, more reliable and less expensive. (A489 PX121) Most importantly, it provides a very inexpensive way to automate daily doubles.

The patent specification is written principally using daily double language. (A213 M175) Regular betting requires a few dozen memory locations (registers) for the win, place and show pool functions. Daily double would add about 150 more, or over four times as many. With the use of magnetic core memories for aggregating bet totals (Claims 20,21), the addition of the 150 registers for daily double involved an incremental cost of only a few hundred dollars. (A1345 WeRBD3676-80) That should be compared with tripling the Amtote Model 7J cost to add the necessary registers. A few hundred dollars is trivial when NYRA was paying Amtote well over a million dollars a year in 1964 for an electro-mechanical totalisator which could not even do daily doubles! (A395 PX38-5th page) And the Amtote Model 7J at Aqueduct had no TIM memory to keep track of the amount of betting at each TIM. There were five to six hundred TIMs at Aqueduct. (A1279 HiD2701) The incremental cost of that number of registers in a TIM magnetic core memory (Claim 22) would also be trivial.

And that is how daily double betting was economically automated by the Claims 20-22 Invention. The TIM number generation means facilitated the use of the claimed magnetic core memories (Claims 21,22) which provided for a solution

to the problem at a trivial incremental cost, plus the advantages of the novel but inexpensive TIM memory.

(3) Additional Advantages of the Claims 20-22 Invention -- Faster, More Compact, More Accurate, More Flexible, More Reliable and Less Expensive

The Claims 20-22 Invention also permitted the economic provision of a dual computing system for increased accuracy and reliability. It permitted participation in the general and ever increasing benefits of speed. (A1244 WeRD2251)

The Claims 20-22 Invention makes dual processing practical and achievable in a reasonable way by using core memory with a single aggregating (adding) element shared by the many registers required; also by providing a single path to the aggregating system on each side so that it is relatively easy, simple and efficient for the dual system to compare address information being presented to each aggregator and to be able to check the output information. (A1242 WeRD2247-48)

The Claims 20-22 Invention occupied only about one-third the space (A489 PX121-27-28) and had flexibility and cut down the amount of investment. (A489 PX121-31) It did away with the necessity of people having to figure prices. (A489 PX121-28) It was not susceptible to cold, heat or dirt. (A489 PX121-29) It could do all the accounting work. (A489 PX121-34) It broke Amtote's monopoly. (A489 PX121-35)

In sum, the Claims 20-22 Invention solved all of NYRA's electromechanical tote problems -- it is fully automatic, including doubles, faster, more compact, more accurate, more flexible, more reliable and less expensive.

(4) How Judge Dooling (Erroneously) Invalidated Claims 20-22 on Their Face

The brilliant Judge Dooling concluded that Claims 20-22 were obvious on their face. How did he do that?⁹

9. The limitations of Claim 20 have been incorporated for convenience into Claim 21, which follows. "A claim may be written in... dependent form, and... it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim." 35 U.S.C. § 112, 2nd par.

Claim 21. A system comprising (A368 FX11, 11A)

20(A) a plurality of ticket issuing machines wherein each of said ticket issuing machines comprises (A990 WeD170, 185)

(1) a plurality of selectively actuatable and latching transaction-selection switches each associated with a different entry in a race for transmitting a selected transaction signal associated with the selected entry, (A990 WeD170, 185-88)

(2) an acknowledgement signal responsive means for issuing a ticket having indicia recorded thereon which is related to a latched switch, (A991 WeD171, 188-94)

20(B) generating means responsive to said selected transaction signal for generating signals representing the entry associated with the particular transaction signal and representing the particular ticket issuing machine, (A991 WeD171-78, 194-203) and

20(C) transaction calculating means for performing a calculation on said generated signals and transmitting an acknowledgement signal to said acknowledgement signal responsive means for issuing a ticket only if the transaction is correct.... (A998 WeD178-79, 203-208).

said transaction calculating means compris[ing]

21(A) register means having addressed aggregation registers for storing the aggregations of transactions, (A1023 WeD208-209)

21(B) means responsive to the signals generated by said generating means for selecting the addressed aggregation register, (A1024 WeD210)

21(C) means for reading out the contents of said selected addressed aggregation register, (A1025 WeD210)

21(D) means for updating the contents of said selected addressed aggregation register, (A1025 WeD210-11)

21(E) means for returning said updated contents to said selected addressed aggregation register, (A1026 WeD211-12) and

21(F) means for transmitting said acknowledgement signal to the acknowledgement signal responsive means when said updated contents are returned to said selected addressed aggregation register. (A1027 WeD212-13)

Claim 22. The system of claim 20 further comprising a ticket issuing machine memory comprising

22(A) a plurality of addressed memory positions each storing the number of

The crucial and novel TIM number signal generation means element 20(B) of Claim 20 was demeaned as "appropriate electronic linkage between the TIMs, an aggregator, a unit adder, and an acknowledgment-signal amplifier between the unit adder and the TIM so that aggregating the wager effects an electro-mechanical release of a ticket." (A179 M141-42) "The undertaking of the combination is an easy one, aggregating wagers without losing track of the horse on which and the pool in which the wager was placed, or the TIM at which the wager was placed." (A180 M142-43) The Claim 20(C) language "only if the transaction is correct" is "null language." (A181 M143-44) "Claim 21 adds nothing." (A185 M147) "Claim 22 adds nothing to Claim 20." (A187 M149)

With the wisdom of hindsight gained from a brilliant mastery of the "highly esoteric field of computer technology" (Johnston, 96 S.Ct.at 1394) and an exhaustive study of the teachings of the patent, and by disregarding crucial claim language, it all became obvious to Judge Dooling or to persons like the inventors, but not to a person of ordinary skill in the totalisator art; see Point C.

transactions made by a ticket issuing machine, (A1029 WeD230-32)

22(B) address-selection means for receiving the signals generated by said generating means for selecting the particular memory position associated with the particular ticket issuing machine, (A1031 WeD232-34)

22(C) reading means for reading out the contents of the selected memory position, (A1033 WeD234-35)

22(D) updating means for updating the read-out contents, (A1034 WeD235-36) and

22(E) returning means for returning the updated contents to the selected memory position. (A1035 WeD236)

With that approach it is hard to imagine any claim being held valid.¹⁰ It is an approach which is not only eminently unfair to the patentees, but is in complete disregard of the uniform procedure established by the Supreme Court and this Court to determine the issue of obviousness. See Point A.

Judge Dooling's conclusion that Claims 20-22 recite obvious subject matter is reversible on its face.

(5) All-Electronic Means of the Claims 20-22 Invention Further Enhances Invention

In 1958, Roosevelt Raceway asked Amtote about the possibility of using available electronic computing techniques to increase betting time and expedite delivery of pay-off information in daily double betting. (A42 M4) Amtote had been experimenting with electronic totalisator techniques since 1945. (A280 F21) As early as 1954 there was a need to improve the electromechanical totalisator operation and do it quicker, cheaper and with less help. (A1084; A1088 LyX362-63, 375-76)

10. Each claim defines a separate invention and is treated in law as a separate grant.

The Fifth Circuit Court, in *Bros Inc. v. W. E. Grace Mfg. Co.*, 351 F.2d 208, 213, 147 USPQ 1, 5, (5th Cir. 1965), cert. denied, 383 U.S. 936(1966), stated:

... we, and all other courts, have often held that it is the claim of a patent that measures the invention so much so that each is (and must be) separable and distinct, each defining in effect a separate invention and each treated in law as a separate grant. *Cameron Iron Works v. Stekoll*, 5 Cir. 1957, 242 F.2d 17, 112 USPQ 411; *Hall v. Keller*, 5 Cir., 1950, 180 F.2d 753, 85 USPQ 32, citing *Steinmetz v. Allen*, 1904, 192 U.S. 543, 24 S.Ct. 416, 48 LEd.555.

Also see *Western States Machine Co. v. S. C. Hepworth Co.*, 147 F.2d 345, 350, 64 USPQ 141, 146 (2d Cir. 1945); *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 258 F.2d 124, 136 118 USPQ 122, 131 (2d Cir. 1958), cert. denied, 358 U.S. 884, 119 USPQ 501 (1958).

Moreover, dependent claims are presumed valid independent of the parent claim. 35 U.S.C. 282. By concluding that Claims 21 and 22 added nothing to Claim 20, Judge Dooling completely disregarded two complete claims; i.e. two separate grants.

In May 1959 Digitronics proposed to design and construct an essentially solid state electronic totalisator for Roosevelt; solid state digital computer technology was the field in which the patentees were working. (A41 M3) Applying the solid state technique to totalisators had previously been 'discarded by men of the highest standing in the electronic field. . . ." (A426 PX86-2) In early 1962 a brochure was prepared entitled "ALL-ELECTRONIC TOTALIZATOR" emphasizing the all-electronic nature of the proposed totalisator. (A78 M40-41, A473 PX120) Just before the spectacularly successful demonstration of the experimental 20-TIM First Tote in March 1963 (A93 M55), "it was believed that the first electronic totalizator would obsolete existing electromechanical machines." (A93 M55)

The patent application was filed on March 28, 1963. (A93 M55) The "specification was drawn from the First Tote and reflects its electronic makeup." (A161 M123) The patentees intended to exclude coverage of electromechanical systems. (A1344 WeD3666) There could have been no intent to cover a known prior art system they wanted to obsolete.

Claims 21 and 22 of the Claims 20-22 Invention clearly recite electronic means, including magnetic core memories. (A185 M147-149) In Claim 20, element 20(A) recites the ticket issuing machines. Element 20(B) (which includes the crucial TIM number signal generation means) was defined by Judge Dooling as "appropriate electronic linkage. . . ." (A179 M141-142) Element 20(C)s "transaction calculating means" is clearly intended to be electronic as is clear from Claim 21 which details it as including the magnetic core memory. Also, the specification of the patent (A301 PX1) at column 18, lines 16-40, clearly states that the transaction calculating means are electronic.

35 U.S.C. § 112, par. three mandates that such means clauses "shall be construed to cover the corresponding structure... described in the specification and equivalents thereof." ¹¹

In sum, from the very beginning, the name of the Digitronics game was to obsolete the prior electromechanical totalisator with an all-electronic totalisator long wanted by the racetracks. The patent specification was drawn from the First Tote and reflects its electronic nature. Judge Dooling specifically found that all of the means elements recited in Claims 20-22 were electronic (except for 20(C)'s transaction calculating means for which he made no finding.) Claim 21 and the specification clearly limit element 20(C) to electronic means. The patentees intended to exclude coverage of electromechanical systems.

It was clearly erroneous for Judge Dooling to find that the claims "must be interpreted as intended to and in form claiming any means embraced in the disclosure of the specification, including any electromechanical and mechanical means that were adequate to function as the indicated means and within the designation of the means language." (A291 F44, A161 M123-24)

11. In *In re Knowlton*, 481 F.2d 1357, 1366, 178 USPQ 486, 492-93 (CCPA 1973), the CCPA interpreted the third paragraph of 35 U.S.C. 112 as follows:

It allows the applicant to use claim language which recited a claim element in terms of "means or step for performing a specified function." If the applicant chooses to use such language, the statute instructs the interpreter of the claims, e.g. the Patent Office or the courts, as to how such language shall be interpreted. It states that such language "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

For the same rule of law also see, for example, *Young v. U.S.*, 179 USPQ 801, 808 (U.S. Ct. Cl. 1973); *Noll v. O. M. Scott & Sons Co.*, 467 F.2d 295, 299-300, 175 USPQ 392, 396 (6th Cir. 1972); *Binks Mfg. Co. v. Ransburg Electro-Coating Corp.*, 281 F.2d 252, 256-57, 126 USPQ 318, 323 (7th Cir. 1960); *Bryan v. Sid W. Richardson, Inc.*, 254 F.2d 191, 194-95, 117 USPQ 157, 160 (5th Cir. 1958); *Stearns v. Tinker & Rasor*, 252 F.2d 589, 597-98, 116 USPQ 222, 228 (9th Cir. 1957).

That is clearly erroneous even if the "point in any case turns out not to be very important...." (A162 M124) His finding is clearly erroneous because, on the entire evidence, he definitely committed a mistake. Heyman v. Winarick, Inc., 325 F.2d 584, 589 (2d Cir. 1963).

The totalisator business needed an all-electronic totalisator and wanted it for some time. The Claims 20-22 Invention is limited to an all-electronic system. That further enhances invention. ¹²

(6) Synergistic Results of Multi-Function TIM Number Signal Generation Means Still Further Enhances Invention of Claims 20-22 Invention

Element 20(B)'s novel TIM number signal generation means serves multiple functions, so that the "whole in some way exceeds the sum of its parts" aptly

¹². It should be noted that the First Tote as a total system is not claimed in a single claim. That would have been enormously complex and of questionable allowability. Instead, different inventive aspects of the First Tote are separately and distinctly claimed as systems and sub-systems. Since each claim must be considered as a separate invention (Point I (4)), each claim has to be separately tested for nonobviousness. But the patentability sub-tests as factual evidence of nonobviousness are by nature limited to the total First Tote system as a single product. It was a total electronic tote system which was first demonstrated by patentees in March 1963 and recognized as a marvel, a breakthrough and the answer to a parimutuel manager's prayers. The industry could not be aware of the technical intricacies of the many systems and sub-systems which together made up the First Tote. A racetrack operator looking at the First Tote equipment cabinets would have no remote idea of the electronic systems it contained. He was only interested in new and useful results.

But the Patent Office would never allow a claim like "a fully-automatic all-electronic totalisator." The patent laws require that inventions be particularly and distinctly claimed in definite technical detail. Therefore, a complete all-electronic system such as the First Tote has to be broken down by systems and sub-systems and separately claimed. And each separate claim is entitled to the benefit of any and every patentability sub-test which factually indicates nonobviousness, even if the sub-test is only meaningful for the system as a whole. Otherwise complex electronics inventions would not be given equal treatment with simple mechanical inventions which can be seen to be appreciated.

describes the Claims 20-22 System.¹³ These multiple functions include: (1) high-speed electronic scanning; (2) magnetic core TIM memory aggregation; (3) TIM-TIM address coordination; and (4) magnetic core memory bet aggregation. While such synergism is only required for patentable combinations of old elements and at least the element 20(B) is new, that synergism still further enhances the inventiveness of the Claims 20-22 System.

Judge Dooling viewed the Claims 20-22 System, retrospectively, as a combination of TIMs, buffers, flip-flops, "and" gates and magnetic core matrices. (A181 M143-146) In 1962, these were the basic building blocks of the electronic digital computer technology. But the A & P synergism test is for a recited combination of old claimed elements. If the building blocks of the claimed elements themselves were the test, then it is hard to imagine any new combination.

Judge Dooling stated that "the system of Claim 20 represents a linear linkage of known devices each performing in sequence its familiar task." (A185 M147) District Judge Connor, a member of the patent bar, described such a viewpoint in apt language in Plantronics, Inc. v. Roanwell Corp., 403 F.Supp. 138, 140, 187 USPQ 489, 491 (S.D.N.Y. 1975).

Viewed retrospectively, the ... invention would seem an obvious combination of old elements. But so would virtually every other invention which consists of a combination of mechanical and/or electrical components. Thus we have been admonished by Graham v. John Deere Co. ..., to avoid "slipping into use of hindsight" and to "resist the temptation to read into the prior art the teachings of the invention in issue" by determining the issue of obviousness under § 103 in accordance with the following uniform procedure....

13. The Great Atlantic & Pacific Co. v. Supermarket Equipment Corp., 340 U.S. 147, 150, 87 USPQ 303, 305 (1950); Anderson's-Black Rock, Inc. v. Pavement Salvage Co., 396 U.S. 57, 60, 163 USPQ 673, (1969); Sakraida v. Ag Pro, Inc., supra at 96 S.Ct. 1532, 189 USPQ 449; Koppers Co. v. S&S Corrugated Paper Machinery Co., 517 F.2d 1182, 1188, 185 USPQ 705, 710 (2d Cir. 1975).

Judge Connor then went on to recite the Supreme Court's § 103 procedure to determine obviousness, referring to the secondary considerations as "apparently inspired by the repeated statements of Judge Learned Hand...."

Judge Dooling's erroneous "obviousness on the face" conclusion from "ABC data processing" by failure to follow the Supreme Court's and this Court's uniform procedure (see Points A-D) naturally but erroneously led him to conclude (A185 M147):

No discovery of any novel union of such means is present, but only a functionally adequate union of means in which each means is used to do what its nature and previous use suggest. The means combined in the system of Claim 20 neither embody nor obey any new law of cooperation.

Judge Dooling's error is indeed primordial.

(7) High-Speed Scanning of Low-Speed TIMs Using Multi-Function TIM Number Signal Generating Means -- the Claims 24-25 Invention

The patent specifically states that "the scanning is electronically performed and proceeds at high speed whereas the ticket issuing machines are electro-mechanical and therefor relatively low speed devices." (A301 PX1, col. 10, lines 72-75) TIM scanning is claimed in Claims 24-25.¹⁴ The scanning means

14. Claim 25. A system comprising (PX15, 15A)

24(A) a plurality of ticket issuing machines each including a plurality of selectively actuatable transaction selection switches each associated with a different entry for transmitting when actuated a selected entry transaction signal associated with a selected entry to an output line when the ticket issuing machine receives an interrogation signal, (A1046 WeD249-50)

24(B) scanning means for sequentially and periodically selecting each of the ticket issuing means for interrogation, (A1047 WeD250-55)

24(C) interrogating means for generating an interrogation signal for transmission to the selected ticket issuing machine, (A1052 WeD255-56)

24(D) sensing means for sensing for a selected entry transaction signal, (A1054 WeD257-58) and

24(E) means for stepping said scanning means to the next ticket issuing machine when said sensing means does not sense a selected entry transaction signal.... (A1055 WeD258-62) [and]

is recited in element 24(B) and employs 20(B)'s novel TIM Number Signal Generating Means, a binary counter. (A192 M154)

In response to critic Western Totalizator in July 1960 (A426 PX86-4), the Claims 24-25 System remarkably effect "a differential sequence access to the same memory" via the multi-function TIM number signal generation means.

Consistent with his "ABC data processing" error, Judge Dooling characterized the Claims 24-25 System as follows (A197 M159):

No discovery is present here. Detail abounds, but ingenious novelty is not present. It is pedestrian circuitry that accomplishes its very simple goal of furnishing a pulse that tracks through a system... and, on circuit completion to origin, ticks the binary counter on to the emission of its next count signal.

Claim 25 adds nothing. ¹⁵

With respect to the principal prior art patent, Handley (A945 DXBQ), Judge Dooling found: "Handley does provide scanning means of the required

25 means for processing a selected entry transaction signal sensed by said sensing means before the stepping of said scanning means to select the next ticket issuing machine. (A1059 WeD262-72)

15. The second sentence of § 103 states: "Patentability shall not be negated by the manner in which the invention was made." The Revisor's Note explains: "The second sentence states that patentability as to this requirement is not to be negated by the manner in which the invention was made, that is, it is immaterial whether it resulted from long toil and experimentation or from a flash of genius." 35 U.S.C.A. 715.

This Court, in *Carter-Wallace, Inc. v. Otte*, 474 F.2d 529, 543, 176 USPQ 2, 12 (2d Cir. 1972), cert. denied, 412 U.S. 929, 178 USPQ 65 (1973), stated:

... a development should not be regarded as obvious merely because it lay somewhere along the general stream of prior art, although years of labor might be required to achieve it. '[T]he inspiration-perspiration process of the laboratory,' *Eli Lilly & Co. v. Generix Drug Sales, Inc.* 460 F.2d 1096, 1103, 174 USPQ 65, 70 (5 Cir. 1972), is as deserving of reward as the flash of genius, and surely more so than dumb luck.

Judge Dooling found that the Claims 20-27 System disclosed "painstaking articulation." (A204 M166)

kind unless the scanning means must generate a TIM number...." (A235 M197)

There is no reference to claims 24-25 in Judge Dooling's discussion of the Aqueduct Totalizator prior art. But he does recognize that a patent similar to Handley was cited by the Patent Office in the prosecution of the Weida patent. He states (A239 M201):

Again, as in the case of Handley, the Aqueduct totalizator illustrates the absence of any novelty in plaintiff's claimed unions of familiar means to perform their usual functions, with their usual effect in a simple additive way. That the Aqueduct totalizator is closely related to Lange No. 3,051,384, cited in the Patent Office, does, indeed, signify that the Patent Office granted the patent over Lange, and that, therefore, the patent is entitled to a presumption of validity over Lange.

It would seem to follow then, that there is a presumption of validity also over the "closely related" Aqueduct totalizator and, since Lange, in turn, cites the Handley patent (A323 PX3D), also over Handley. But not to Judge Dooling:

But the presumption evaporates when the patent is scrutinized in the light of Handley (cited in Lange) and the Aqueduct totalizator itself. The facility with which the patent was issued remains inexplicable.¹⁶ (A239 M201)

Again that conclusion is the result of the compounded primordial errors of selecting the general data processing field as the pertinent art rather than the totalisator business, and disregarding the uniform procedure established by the Supreme Court and this Court to determine the obviousness-nonobviousness issue. His compounded primordial errors permeate the entire Memorandum.

16. There is an explanation for the facility with which the patent was issued by the Patent Office. The Examiner obviously recognized the fundamental difference between the patentees' all-electronic totalisator and the prior art electro-mechanical totalisator systems like Lange, Handley and Aqueduct, and did not even rely on the electromechanical totalisator art in rejecting any claims. (A320 PX2-82-84)

In deference to the technical expertise of the Patent Office, now Justice Stevens recently stated that "clear and cogent evidence" is needed to prevail over art cited by the Examiner. *Chicago Rawhide Mfg. Co. v. Crane Packing Co.*, supra, 523 F.2d at 458, 187 USPQ at 546.

- (8) Scratched Horse Sub-System (Claim 23) and Error Checking Sub-System (Claims 26-27), Both Novel, Supplement Claim 20(C)'s "Issuing a Ticket Only If the Transaction Is Correct"
-

The First Tote had a sub-system for preventing a human error of issuing a ticket on a horse that was not running in a race because it had been scratched; Claim 23.¹⁷ The First Tote also had a sub-system for checking for internal

17. Claim 23. A system comprising (A371 PX14, 14A)

(A) a plurality of ticket issuing machines wherein each of said ticket issuing machines comprises (A1036 WeD237)

- (1) a plurality of selectively actuatable and latching transaction-selection switches each associated with a different entry in a race for transmitting a selected transaction signal associated with the selected entry, (A1037 WeD238)
- (2) a rejection signal responsive means for unlatching any latched switches, (A1037 WeD238-39)
- (3) and an acknowledgement signal responsive means for issuing a ticket having indicia recorded thereon which is related to a latched switch, (A1038 WeD239)

(B) switch means which comprises a plurality of selectively actuatable transaction-prevention switches for generating non-allowed signals associated with entries upon which transactions will not be allowed, (A1038 WeD239-43)

(C) comparing means for comparing the selected transaction signal with the non-allowed signals to generate a nontransaction signal when a particular transaction signal and a nonallowed signal represent the same entry, (A1042 WeD243-46)

(D) rejection means responsive to a nontransaction signal from said comparing means for transmitting a rejection signal to the rejection signal responsive means of the ticket issuing machine for unlatching any latched switches, (A1044 WeD246-47) and

(E) means for transmitting an acknowledgement signal to the acknowledgement signal responsive means of the ticket issuing machine for issuing a ticket only if the selected transaction is allowed. (WeD247)

system errors, notably false wagers and duplicate wagers; Claims 26-27. 18
 (A199 M161) Both sub-systems serve to supplement element 20(C) of the
 Claims 20-22 System which provides "for issuing a ticket only if the transaction
 is correct." The all-electronic digital technology of the First Tote permitted
 the efficient implementation of these error checks.

Judge Dooling indirectly found that Claim 23 was novel over the most
 pertinent prior art reference, the Handley patent (A945 DXBQ), in finding
 the suggestion "that Handley's means are a full equivalent of the comparator
 of the patent." (A234 M196) If it were the same there would be no need to
 argue equivalency. Also, claim 23 is limited to all-electronic means, 35 U.S.C.
 112, par. 3, whereas "Handley is essentially electromechanical and not an
 electronic digital processing system...." (A232 M194) As indicated above
 (Point I(5)), electronics was considered a fundamental difference in the totalisator

18. Claim 27. A system comprising (A375 PX16, 16A)
 26(A) a ticket issuing machine which comprises (A1070 WeD273)

- (1) a plurality of selectively actuatable and latching transaction-selection
 switches each associated with a different entry for transmitting a
 selected entry transaction signal associated with the selected entry
 to an associated output line, (A1070 WeD273-74)
- (2) a rejection signal responsive means for unlatching any latched switches
 upon receipt of a rejection signal, (A1071 WeD274) and
- (3) an acknowledgement signal responsive means for issuing a ticket
 having indicia recorded thereon which is related to a latched switch,
 (A1071 WeD274-75)

26(B) entry checking means for checking for erroneous selected entry
 transaction signals and for transmitting a rejection signal to said ticket
 issuing machine when erroneous selected entry transaction signals are
 sensed, (A1072 WeD275-78) and

26(C) means for transmitting acknowledgement signals to said ticket issuing
 machine when the selected entry transaction signal is correct.... (A1075
 WeD278-80)

27 said entry checking means compris[ing] means for sensing for the
 simultaneous presence of more than one selected entry transaction signal.
 (A1077 WeD280-86)

business. There was no finding of lack of novelty of Claims 26-27 over Handley, or any other pertinent art. Also, the same electronic differences are present in the Claims 26-27 sub-system. So both sub-systems are clearly novel.

Under Graham, that would move the focus of the inquiry to § 103 where the many indicia of nonobviousness would come into play. But not for Judge Dooling (at A237 M199-200):

The detailed consideration of Handley demonstrates the overall absence of patentable novelty in the patent in suit. It brings out sharply the extent to which familiar circuits have long handled familiar tasks, and that the plaintiff's patentees brought no new discovery to the task but only a routine choice of familiar but newer means to replace the older ones of Handley in the same union of means.

Again, his conclusion follows his compounded primordial errors of selecting the data processing field rather than the totalisator business as the pertinent art and disregarding the Supreme Court's and this Court's uniform procedure to determine the obviousness-nonobviousness issue.

But note that he found "newer" (i.e. novel) means in the patent.

(9) Principal Prior Art Patent (Handley) Is Inoperative Thus Clinching Inventiveness of Claimed Inventions

Handley (A945 DXBQ) is an inoperative paper patent which should be considered as further evidence of invention, or at least strictly construed. Defendants' expert, Dr. Highleyman, admitted that Handley could issue a ticket if the transaction were incorrect. (A1317 HiX3199, 3200, 3212) And Judge Dooling found that the "acknowledgement circuitry of Handley is not assured against certain conceivable errors,..." (A235 M197) That conflicts with Claim 20(C)'s provision of "issuing a ticket only if the transaction is correct." But Judge Dooling (improperly) got by that hurdle by finding such language to be "null language." (A212 M174)

Handley is obviously a paper patent because of its "bugs" that make it inoperative at the very points of novelty claimed by the Weida patent. If the Handley system had actually been built and tried, then its problems might have been discovered and fixed. But, as a paper patent which is inoperative, all it teaches is how to build an electromechanical tote which won't work.

A paper patent should be strictly construed. It is not entitled to a construction of broader scope than it is clearly required to be given. 7 Deller's Walker on Patents 365 (2d ed. 1972).

Of course, it has long been doctrinal in U.S. patent law that an inoperable prior art reference which fails to achieve its intended result does not negative novelty. United States v. Adams, 383 U.S. 39, 50, 148 USPQ 479, 483 (1966), Smith v. Snow, 294 U.S. 1, 17, 24 USPQ 26,32 (1934). And in Ling - Temco - Vought, Inc. v. Kollsman Instrument Corp., 372 F.2d 263, 152 USPQ 446 (2d Cir. 1967), an unworkable prior art patent was construed by Judge Medina to provide support for nonobviousness and validity of the patent there in suit.

Inoperative Handley clinches the inventiveness of the subject matter of Claims 20-27.

J. SOFTWARE PROGRAMMED GENERAL-PURPOSE COMPUTER IS
A NEW MACHINE SYSTEM AND THE ACCUSED NYRA AND PDP-8
TOTALISATORS INFRINGE CLAIMS 20-27 BECAUSE THEY WERE
NEWLY DESIGNED AND PERFORM ALL OF THE CLAIMED FUNCTIONS

The accused NYRA and PDP-8 totalisator systems perform all of the functions claimed by the elements of claims 20-27. The Lower Court found that each accused system "performs the function to which the patented combination of means is addressed.... it is programmed to do what the system of plaintiff's product patent is capable of doing by machine means...." (A250 M212)

Defendants had argued: "Simply stated the basic issue posed is whether an apparatus claim... can be infringed where the recited elements exist only in sequenced transitory states... through the software 'program'... and do not coexist as physically identifiable entities at any given instant of time." (A245 M207)

"The general processor..., plaintiff appears to argue, embodies physically... the unions of means of the patent claims in suit...." (A246 M208)
"There is no logical defect in plaintiff's argument...." (A249 M211)

Nevertheless, Judge Dooling, on his own, found the accused systems to be noninfringing. (A293 F48) (His theory was not briefed by either side.) He interpreted the "uncertain light of" Gottschalk v. Benson, 409 U.S. 63, 175 USPQ 673 (1972), as leading to the conclusion that

a combination of means claim comprising a machine system is not infringed by another machine system which does not as a permanent machine system include the same combination of means, and which performs the function to which the patented combination of means is addressed only when its general purpose digital computer element is "instructed" -- programmed -- in the processing of the type of raw data to be fed into it. (A250 M212)

To reach that conclusion, Judge Dooling erroneously assumed that a programmed general-purpose computer is a new use of an old machine, capable of infringing only a process claim. (A251 M213) In technological fact, an unprogrammed old machine is changed into a new machine by a structurally-stored new software program. Defendants' expert, Dr. Highleyman, in describing the design of the NYRA Totalisator, stated (A1277 HiD2698-99):

Q Now, could you just tell us just what is hardware and software....?

A Well, the hardware elements of course were the physical elements of the system, in terms of the -- of the elements, the Data Trends was responsible for designing including the scanning equipment and the display board control interfacing equipment.

The software, of course, were programs written for the computer. The computer itself being a hardware element of the system....

Well, the computer of course is a system element, is -- comprises its hardware elements and its software elements in order to do its function....

In sum, a programmed computer comprises hardware and software elements by virtue of the structurally-stored software program. It follows, then, that the programmed computer is a new machine because it comprises new structure.

Judge Dooling also erroneously stated that the general-purpose digital computer "is itself a total and self-complete machine entity." (A250 M212) That is also contrary to technological fact. The unprogrammed general-purpose computer is so incomplete that it cannot perform an end use any more than an unassembled tinker toy. In explaining how he designed the hard-wired TIM scanner of the NYRA Totalisator, defendants' witness Dr. Highleyman stated (A1280 HiD2703):

... these cards perform the standard logic functions of "and" gates, "or" gates, inverters, flipflops, delays and so on.

It was the function of the logic designer whose role I played in this project to design a device such as a TIM scanner using the

standard logic modules, plugging them in and interwiring them in an appropriate way to do the required task.

It's kind of like putting tinker toys together.

The same can be said for putting together the software elements of the computer system so that it can do the required task. It is its stored software program which completes it and gives it the ability to perform an end use. In effect, the general-purpose computer is a "storehouse of parts" and the stored program creates "instant hardware" by sequentially connecting the computer parts into a new combination -- i.e., a new machine.

These errors of technological fact are sufficient for a reversal of Judge Dooling's conclusion that the accused devices do not infringe machine system claims 20-27. The accused devices do infringe, whether or not they are "permanent", because they perform all of the claimed functions; so they must have the means to do so.

(1) Software Programmed General-Purpose Computer is More Permanent Than an Incomplete Unprogrammed Computer Having No End Use

Judge Dooling's noninfringement conclusion seems to be based on his view that "a machine system is not infringed by another machine system which does not as a permanent machine system include the same combinations of means...."

(A250 M212)

"Permanent" is surely a matter of degree. Thus, a programmed general-purpose computer is more permanent than an unprogrammed one, which has no end use. And a permanently programmed general-purpose computer for permanently performing some of the racetrack parimutuel tasks is still more permanent -- almost as permanent as the hardwired TIM scanners of the accused devices for collecting the betting data from the scanned ticket issuing machines. (A1280 HiD2703)

In Great Britain before the Royal Courts of Justice, the Patents Appeal Tribunal held that [a software programmed] invention "is embodied in the apparatus and programme described which has the effect of permanently controlling the whole system so that it operates in this particular way unless and until the programme is changed." The Application of Burroughs Corporation, RPC (1973), p. 147, The Fleet Street Reports (1973), pp. 439-450.

In the accused devices the computers are permanently programmed to do their part of the parimutuel betting tasks -- there is no interest in changing the program to do another task, so that they are still more permanent. But however the degree of permanence, if a system incorporates a software programmed general-purpose computer, it is a new machine which can infringe a machine system patent, the case here.

To be a "new use for a known machine" requires the use of substantially the same structure as the prior art so that there is "a change only in form, proportions or degree, doing substantially the same thing in the same way by substantially the same means." Roberts v. Ryer, 91 U.S. 150, 159 (1875).

But the unprogrammed general-purpose computer is an incomplete machine that has no end use. There is no new end use for the known unprogrammed machine because there is no old end use for it.

(2) Software Programmed General-Purpose Computer Is a New Machine
According to the Supreme Court in the Recent Johnston Case

A more fundamental error of the Lower Court is now evident from the subsequent Supreme Court decision in Johnston, supra.

In Johnston, the Supreme Court found that claims to a software programmed machine system defined a new machine under 35 U.S.C. § 102. The Johnston

system is for automatic record keeping of bank checks and deposits, disclosed in part as a general control in the form of a new software computer program effectuated with an old IBM 1400 computer. Johnston's machine system claims were found to be obvious under 35 U.S.C. § 103 over a prior Dirks patent disclosing a complex automatic data processing system using a programmed digital computer.

§ 103 is only reached if there is novelty under § 102. The Supreme Court in Johnston quoted § 103, starting with

"A patent may not be obtained though the invention is not identically disclosed or described or set forth in Section 102..."

and stated:

We hold that respondent's invention was obvious under 35 U.S.C. § 103 and therefore reverse.

The Dirks patent discloses a complex automatic data processing system using a programmed digital computer for use in a large business organization....

It may be that ability [to allow a large number of small users to get the benefit of large-scale electronic computer equipment and still continue to use their individual ledger format and bookkeeping methods] is not possessed to the same extent either by existing machine systems in the banking industry or by the Dirks system. But the mere existence of differences between the prior art and respondent's system does not establish the invention's nonobviousness. 96 S. Ct. at 1397, 1399.

Indeed, case after case has held that programming of a general-purpose digital computer creates a new machine. Ex Parte King and Barton, 146 USPQ 590, 591 (Patent Office Board of Appeals 1960); In re Prater and Wei, 415 F.2d 1393, 1405, 159 USPQ 583, 593, (CCPA 1969); In re Bernhart and Fetter, 417 F.2d 1395, 1400, 163 USPQ 611, 616, (CCPA 1969); In re Comstock and Gilmer, 481 F.2d 905, 909, 178 USPQ 616, 620, (CCPA 1973); In re Knowlton, 481 F.2d 1357, 178 USPQ 486 (CCPA 1973). The CCPA in Knowlton stated (481 F.2d at 1368, 178 USPQ at 494):

As appellant points out, the board's complaint that "there never exists at the same time a means for performing both successive functions" is inconsistent with the fact that when appellant's program is fully loaded into the computer the stored pattern of signals transforms the unprogrammed machine into a new structure, with all the necessary hardware elements being physically interrelated so as to enable them to perform their specified functions. See In re Bernhart, 57 CCPA 737, 742, 744, 417 F.2d 1395, 1399, 1400, 163 USPQ 611, 615, 616 (1969). Indeed, the rejection before us is very similar to the section 112 rejection which the board overturned in Bernhart. See 57 CCPA at 741, 417 F.2d 1398, 163 USPQ at 614. The situation before us is not analogous to a radio receiver which "has been constructed from various parts taken from a radio transmitter, as the board indicated. It is more analogous to a combination transmitter-receiver in which a single element, or a part of the circuitry, plays a different role depending on whether the instrument is being used to transmit or receive." (Court's emphasis)

The Supreme Court in Johnston avoided a decision on the "question of general patentability of computer programs." But the "machine system" form of the claims was not questioned by the Court, nor was the permanence of the programmed IBM 1400.

In Decca Ltd. v. The United States, 188 USPQ 167, (Ct.Cl.Trial Div.1975), aff'd, 287 PTCJ A12 (July 9, 1976), the patent-expert Trial Judge found that a software programmed general-purpose digital computer when combined with other elements of the patented navigational system, infringed the patent. The Trial Judge stated:

Indeed, as defendant's expert testified at trial, the program accomplishes nothing by itself; it must be mechanized to achieve the navigational functions for which the [patented] system is designed." ... [T]he means for performing those instructions and achieving the end result quite clearly have a tangible, physical existence which meets the terms of the claim." 188 USPQ at 173.

(3) Machine Need Not Be Permanent to Infringe a Machine System Patent -- Otherwise There Is a Denial of Equal Protection of the Patent Laws

Consider a machine system patent on a radio transmitter. Does a combination transmitter-receiver (of the popular citizen's band variety) avoid infringement because a part of the circuitry plays a different role

depending on whether the instrument is being used to transmit or receive? Normally, the transmitter-receiver is in the receive mode. Only when its transmit switch is operated does it go into the transmit mode and interconnect the patented radio transmitter system. Surely, that is an infringement even though the patented transmitter system is only duplicated temporarily.

Where in the patent law is there a requirement for a permanent infringement as a condition to liability? If such a permanent requirement is to be grafted onto the patent law solely for machine system patents which can be practiced by software programmed general-purpose computers (no doubt many tens of thousands), surely that is a denial of equal protection of the patent laws for those patents.

Equal protection requires that patented machine system inventions which can be practiced by programmed general-purpose computers be given the same protection as those which can't. See Richardson v. Belcher, 404 U.S. 78, 81 (1971); Bolling v. Sharpe, 347 U.S. 497, 499 (1954) -- i.e., absence some rational basis for the discrimination, see Morey v. Doud, 354 U.S. 457, 465 (1967); Mayhue v. Plantation, 375 F.2d 447 (5th Cir. 1967).

In the Morey case, the American Express Company was exempted from requirements imposed on other vendors of money orders by legislation found by the Supreme Court to be arbitrary and therefore unconstitutional. The same sort of arbitrary economic discrimination condemned in that case is at the heart of the denial of protection to machine system patents which can be practiced by software embodied special-purpose computers while granting protection against infringement to those patents which can't so be practiced.

K. EQUIVALENCE OF HARDWARE AND SOFTWARE MEANS TO PROGRAM A COMPUTER IS GENERALLY RECOGNIZED SO THAT A SOFTWARE PROGRAMMED COMPUTER PERFORMING THE SAME FUNCTIONS AS A COMBINATION OF MACHINE MEANS IS AN INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS

Judge Dooling concluded his noninfringement analysis with a most cryptic comment:

The programmed general-purpose digital computer does not so do the racetrack job; it does the same tasks but not by the same or equivalent machine means. 187 USPQ at 640.

This nonequivalency conclusion is completely unsupported in the record.¹⁹

There is no hint from the Lower Court as to the basis of its conclusion. Most likely, it was trying to avoid the plain import of 35 U.S.C. § 112, paragraph 3.

An element in a claim for a combination may be expressed as a means . . . for performing a specified function without the recital of structure, . . . and such claim shall be construed to cover the corresponding structure, . . . and equivalents thereof.

It is generally acknowledged in computer technology that there is an equivalence of hardware and software means, namely, that a special purpose computer can be built either by hardwired logic circuitry (the instant patent disclosure) or by programming a general-purpose computer (part of the accused systems). There is a well-established technological "principle of the equivalence of [software] programming and hardware. This principle [is based on the fact] that a program for a general-purpose machine turns it into a special-purpose machine."²⁰ This equivalence is inherent in the concept of the stored-program

19. On the contrary, Weida specifically testified to the equivalency of hardwired and programmed structure. With respect to the NYRA Totalisator, see A1108 WeD773-780. With respect to the PDP-8 Totalisator, see A1116 WeD982-996.

20. Prof. Saul Gorn, Final Report No. AD 59 UR1, at p. 4, from Univ. of Penna. Moore School of Elec. Eng. to U.S. Army Signal Research & Development Labs, 1959.

computer. The first electronic digital computer, the ENIAC, built about 1945, was not a stored-program computer. Programs were installed and changed by engineers who changed the wiring among its various components.²¹

This equivalence is admitted by defendants' own technical expert, Dr. Highleyman, (A1315 HiX3120-21):

But in a system like this, the programming of a system which is embedded inside a real time system of this nature, is more than just writing a program. It's the person who is responsible for the design and implementation of these programs who must also understand thoroughly how the hardware works, because there is a very important, complex and delicate balance between the hardware and software. There are a lot of things you could elect to do, either in hardware or in software.

If the Lower Court's failure to recognize the equivalence of hardware and software is affirmed, it would open a Pandora's box and lead inevitably to a "raiding" situation in which existing hardware patents have no legal protection from infringing software-constructed devices. Patents based upon the disclosure of a hardware implementation "would be of little worth," and, for such patents, the doctrine of equivalency would be unjustifiably nullified. Surely, a softwired machine system performing exactly the same functions as a patented hardwired machine system infringes that patent under the doctrine of equivalents. Continental Paper Bag Co. v. Eastern Paper Bag Co., 210 U.S. 405, 418 (1908); Graver Tank & Mfg. Co., Inc. v. The Linde Air Products Company, 339 U.S. 605 (1950).

21. S. Rosen, Purdue University, "Electronic Computers; A Historical Survey," Computing Surveys, Vol. 1 (1969), pp. 7, 8.

L. PROGRAMMABLE COMPUTER HAS A CHANGEABLE "RULE OF ACTION" AND IF IT CAN BE USED TO INFRINGE WITH IMPUNITY TECHNOLOGICAL PROGRESS WILL BE IMPEDED AND THE SUPREME COURT'S JOHNSTON CASE UNDERMINED

Every machine is characterized by its rule of action which resides within the machine itself. Robinson, The Law of Patents, §§ 173 and 175 (1890). Machines that are different can be characterized by the different rules of action resident in each. The advent of the programmable digital computer made available for the first time a machine having a truly changeable "rule of action."²² The digital computer is so flexible that it can run entire chemical processing plants or make connections for transcontinental telephone conversations. For each of these different situations machines with different "rules of action" are required. In each case the "rules" are stored in the computer memory to form different and therefore new machines.

Judge Dooling's starting point, that a machine is "governed by a permanent artificial rule of action . . .," (A248 M210) is inapplicable to a programmable computer, so that his noninfringement conclusion is erroneous for that reason alone.

Computer technology has advanced from the maxicomputer, -- for example, the Honeywell 200 of the accused NYRA Totalisator System, -- to the minicomputer -- for example, the PDP-3 of the accused PDP-8 Totalisator System. Because of its relatively low cost, the minicomputer has found wide application as a substitute for mechanical, electromechanical, analog electrical and digital electrical systems commonly used in industry. Once the minicomputer is

22. "Programmable devices -- Your best buy in control?", Modern Materials Handling, February, 1975.

programmed to serve a particular function in an industrial system, the program usually remains unchanged. The minicomputer effectively becomes a special purpose computer, and performs like a hardwired computer. The choice of whether an innovation should be embodied in a programmed minicomputer or in a hardwired computer often turns on economic considerations.²³

More recently, another form of general-purpose digital computer has become commercially available which is smaller and lower in cost than the minicomputer. Aptly termed "microcomputers," these machines are formed by combining a read-only memory with a microprocessor.²⁴

To be able to avoid infringement of a patent on a hardwired special-purpose computer system, such as the patentees', by simply incorporating a relatively inexpensive microcomputer will, no doubt, impede innovation in the digital computer technology. Why spend money on expensive and possibly unsuccessful research and development when someone else's success can be copied with impunity? But why should that "someone else" expend his resources on research and development when, even if successful, the results can be copied with impunity?²⁵

23. "Hard-wired numerical controllers yield to efficient minicomputers," *Electronics*, April 12, 1973.

24. "Microcomputers -- Evolutionary successor of the minicomputer, the microcomputer is a set of microelectronic 'chips' serving the various computer functions. It has opened up new realms of computer applications," *Scientific American*, May, 1975; "Computers: First the Maxi, Then the Mini, Now It's the Micro," *Science*, Vol. 186, December 20, 1974; "News Scope -- \$15 microprocessor coming for simpler applications," *Electronic Design*, August 16, 1975; "Microprocessor Sparks a Quiet Revolution in Instrumentation," *Electronic News*, Vol. 20, No. 1039, August 4, 1975; "Microprocessors & minicomputers: what will the future bring?", *EDN*, November 20, 1974.

25. "Gottschalk fears that businessmen caught in 'unfair' and 'irrational' court decisions will hesitate to go back to the laboratory and invest more money in reliance on a patent system that lets them down." Hummerstone, *How Patent System Mousetraps Inventors*, *Fortune*, May 1973, at 264, quoting the then Commissioner of Patents.

It is not an answer to say "include a new use for a known machine process claim," 35 U.S.C. 100(b), when the disclosure is of a new hardwired machine which cannot support such a claim. And if the disclosure is a software programmed known machine, there is serious doubt as to whether process claims are patentable. *Gottschalk v. Benson*, supra. So, if the Lower Court is sustained, the irony will be that Johnston says you can claim a new software programmed known machine by machine system claims but Digitronics says that they can't be infringed, even if the patent disclosure is exactly duplicated!

That undermines Johnston.

M. LOWER COURT'S RATIONALE OF NONINFRINGEMENT, THAT ALL OF THE TASKS OF THE PATENTED MACHINE SYSTEM ARE PERFORMED BY KNOWN COMPUTERS, IS FACTUALLY INCORRECT SO THAT THE NONINFRINGEMENT CONCLUSION SHOULD BE REVERSED

The rationale of Judge Dooling's conclusion that the accused NYRA and PDP-8 Totalisator Systems do not infringe Claims 20-27 appears to be based on his statement (A251 M213) that:

The programmed general-purpose digital computer does not so do the racetrack job; it does the same tasks but not by the same or equivalent machine means. Rather, it performs the tasks ... by a new use of a known machine, and that is a process under 35 U.S.C. 100(b).

He appears to be saying that if all of the tasks of the patented machine means are done by the old computer then the system can only be protected by claims in the form of a new use for an old machine. But all of the tasks of the patented machine means are not done by the accused systems' incorporated computers.

Each accused totalisator system consists of (see A423 PX52, 62): a plurality of ticket issuing machines (TIMs); at least one newly-designed hard-wired scanner to sequentially scan the TIMs in order to service, one at a time, those on which bets have been entered;²⁶ two general-purpose computers programmed to do some of the tasks of the system, especially aggregating the bets made on each horse and on each TIM and cross-checking each other for accuracy; and a newly-designed hardwired tote control console. The general-purpose computers are only a relatively small part of each system. In the case of the PDP-8 Totalisator System, the computers occupy only a small part of the central equipment (see Attachment (A1), PX43, pp. 6-7 with the arrows on the copy, Attachment (A2), pointing to three PDP-8 digital computers, the third being an extra.)

The NYRA totalisator system is by far the larger in terms of numbers of TIMs so it uses a plurality of hardwired scanners, each assigned to a pre-determined portion of the TIMs, together with an additional hardwired master scanner to scan the scanners so that only one bet is processed by the computers at one time.

Claim 20 (A360 PX10) requires a plurality of TIMs 20(A), TIM number signal generating means 20(B) and transaction calculating means 20(C). The TIM number generating means 20(B) is a completely new and crucial means. (See Point I(1)) In each accused system, the crucial TIM number signal generation is performed in a scanner and not in a computer. (A423 PX52, 62)

26. The 16 man years of design time of the NYRA totalisator system (A1314 HiD3107) could hardly have been expended solely in programming the Honeywell computer. The TIM scanners were hardwired. (A1280 HiD2703)

Judge Dooling's rationale that all of the tasks of the patented machine means are done by the computers is based on a technological assumption which is manifestly incorrect. It therefore fails, and with it the foundation for his conclusion that the accused devices do not infringe claims 20-27.

But could Judge Dooling have meant that if the function of any part of a claimed combination of means is performed by a software programmed general-purpose digital computer, then there could be no infringement of that machine system claim? If so, the potential damage from such a rule to computer technology innovation is severe. To avoid infringement of the most complex machine-system patented mechanical, electromechanical, analog electrical or digital electrical system used in industry, all the copier need do is incorporate in some part of his copy a microprocessor which might not cost more than \$15.²⁷

Surely, this Court should not add its imprimatur to such a rule of law.

In any event, subsequent to the Lower Court decision, a patent-expert Trial Judge of the Court of Claims specifically held that a software programmed general-purpose digital computer when combined with other elements of the patented navigational system infringed the machine system patent. Decca Ltd. v. The United States, supra.

The Lower Court's noninfringement conclusion should be reversed.

27. "News Scope -- \$15 microprocessor coming for simpler applications," *Electronic Design*, August 16, 1975. Rensberger, Low-Cost Computers Beginning to move into the Home, *N. Y. Times*, May 4, 1976, at 1, Col. 1 and 23, col. 2 -- "A decade ago a computer of this capability cost several hundred thousand dollars. Today, using a mass-produced microprocessor, one can be had for \$200.*** Four years ago a typical microprocessor cost \$400. Today the best-selling one retails for around \$15."

V. CONCLUSION

In this Circuit there is an apparent lack of uniformity of standard of invention between the Southern and Eastern Districts. Approximately five times as many patents are held valid in the Southern District as in the Eastern District.²⁸ One reason is the failure to employ a uniform procedure for determining the obviousness-nonobviousness issue. Applying the uniform procedure of the Supreme Court and this Court to determine the obviousness issue seems to be mandated.

The international predominance of the United States in science and technology has suffered erosion in the last 15 years. Such nations as the Soviet Union, West Germany, France and Japan have been improving their inventiveness and support for science and worker productivity faster than the United States.²⁹ This erosion of our technological predominance can, in significant part, be traced to the eroding protection of U.S. patents.³⁰

If the present technological lead of the United States over the Soviet Union is based on any specific technology, surely it is the digital computer technology.

28. For the period 1968-1972, the ratio of the Eastern District's validity decisions to the Southern District was 6.67%-31.10%. The national district court average was 51.80%. 165 Patent, Trademark and Copyright Journal D1-D4 (Feb. 14, 1974). See Attachment (B). While supplemental data has not been found, there seems little reason to believe that the ratio has changed very much. According to a count of cases reported in USPQ, the patent in suit is the twelfth patent in a row invalidated by Judge Dooling.

29. National Science Board, National Science Foundation, Science Indicators 1974, Report of the National Science Board 1975 (to the President of the United States), (Superintendent of Documents Stock No. 038-000-00253-8), pages 16-21. McElheny, U.S. Science Lead is Found Eroding, N.Y. Times, March 14, 1976, at 1, col. 5.

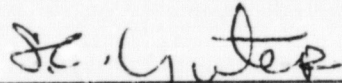
30. Hummerstone, *supra*, at 262-274, quoting the then Commissioner of Patents that confidence in the patent system "has been shaken by a series of court decisions running in a tide against the patentee...."

The Lower Court's conclusion that a software programmed general-purpose computer which duplicates the functions of a machine system claim does not infringe, will make no contribution to the progress of computer technology, and probably serve to further erode our technological lead.

But even if the strength of our patent system, especially in the important field of digital computer technology, is not a proper concern of this Court in this case, the overwhelming evidence of nonobviousness and the technological fact that the accused devices, though they employ software programmed computers, are new or equivalent machines, require that the patent be found valid and infringed.

Precise Relief Sought: Since plaintiff has waived its right to injunctive relief and only seeks a reasonable royalty for the use of its claimed inventions, the judgment of invalidity and noninfringement should be reversed and the case remanded to the Lower Court for an accounting of damages.

Dated: June 11, 1976



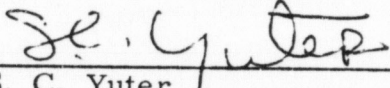
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CERTIFICATE OF SERVICE

This will certify that two copies of the foregoing BRIEF OF THE APPELLANT (referenced to deferred appendix) were personally served this 16th day of September, 1976 upon the following:

Robert E. Isner, Esq.
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Appellants

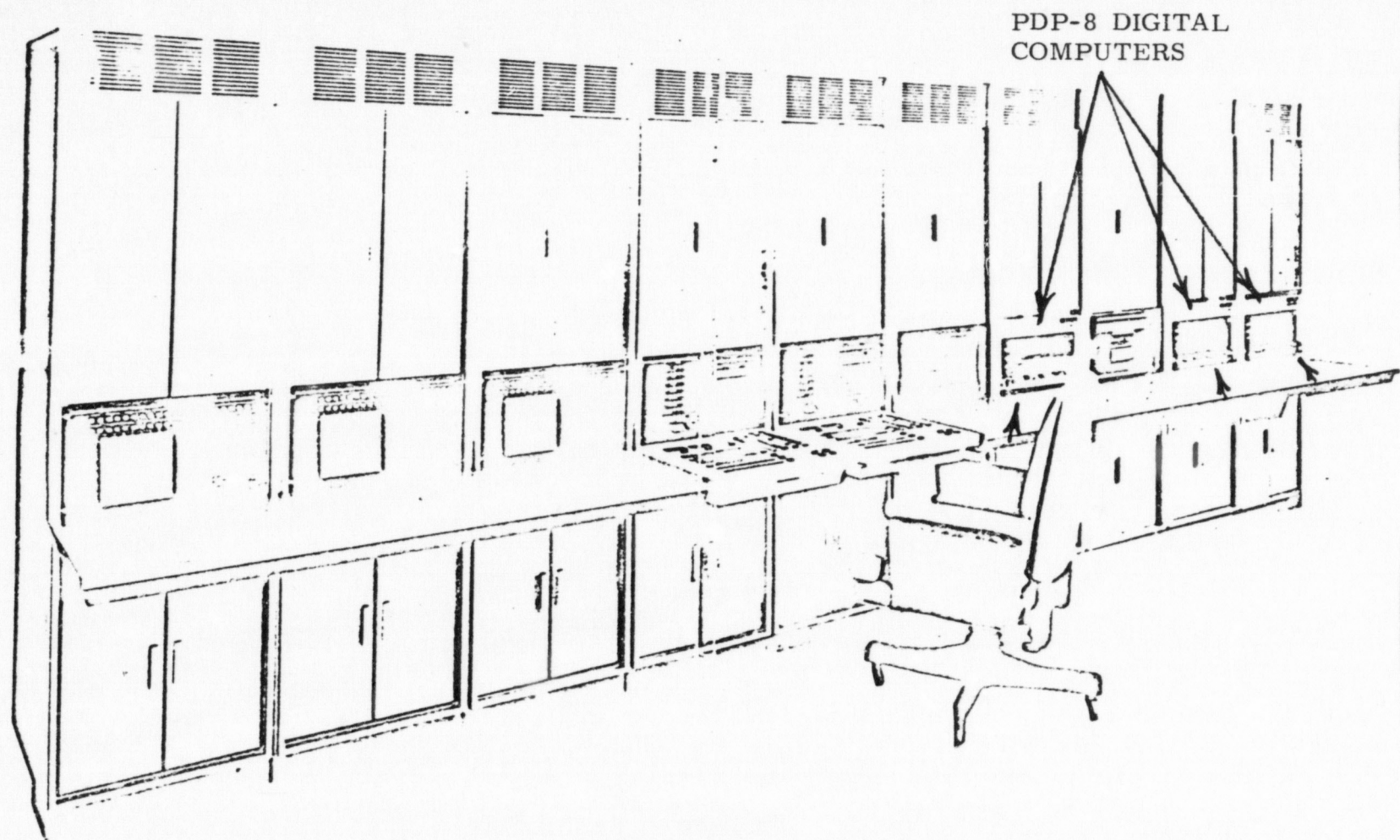


S. C. Yuter
Counsel for Appellant



ATTACHMENT (A1)

From Exhibit 43,
Pages 6-7



PDP-8 TOTALISATOR SYSTEM
CENTRAL EQUIPMENT.



TEXT BNA's PATENT, TRADEMARK & COPYRIGHT JOURNAL

FURTHER STUDIES ON PATENT VALIDITY/INVALIDITY ON A CIRCUIT-BY-CIRCUIT BASIS, 1968-1972

This is an extension of the earlier validity study of August 31, 1973 and uses the same data base. The guidelines for the tabulation of data are similar to those used for the earlier study except as specifically set forth below.

No attempt has been made to determine whether a counted decision was the final decision as was done in the previous report. In other words, this report includes all decisions whereas the previous report counted only those decisions which constituted a final adjudication of a patent or patents. Thus, for instance, the figures for all the District Courts here differ from the earlier report because each and every determination of validity or invalidity has been counted for each District Court, and for all the District Courts in total. Therefore, the numerical information set forth in the appended tables does not agree with comparable tables from the previous report. There is agreement however, between this study and the earlier study in the totals for the decisions of the Circuit Courts of Appeal because the counting of decisions at the appellate level is a tabulation of the final adjudication of patents.

In addition, the decisions involving all types of patents, plant, design, reissues and utility are combined together in the appended tabulation, and no attempt has been made to differentiate the decisions involving different types of invention. It might be noted that the number of plant and design decisions are probably statistically insignificant, there being only one countable lower court plant decision, and 43 lower court design decisions scattered throughout the circuits. Furthermore, in the appellate tables, there are no plant decisions and only eight design decisions scattered throughout the circuits. Reissues have been treated the same as regular utility patents.

A number of the findings of validity in the District Courts were by consent judgments. Consent judgments have been counted in the first set of appended tables whenever validity or invalidity was specifically indicated on the 35 USC 290 notices returned by the clerks of the courts to the Patent Office. There were 61 such consent judgments as indicated in the previous report. 1/ However, in order

1/ There was only one consent judgment of invalidity.

to reflect more accurate validity findings, the first set of tables herein, have included, in addition, consent judgments coupled with an injunction as a decision of validity. There are 110 additional such findings of validity including the decisions of the Court of Claims. Consent judgments have been set out separately, both in total number, and as a percent of those counted as decisions on validity in the first set of tables.

A second set of tables are also appended in which all consent judgments are omitted. The second set of tables include all the information of the first set except the consent judgments.

In both the District Court tables and the Circuit Courts of Appeal tables, the Court of Claims has been first set out separately from the totals and them combined with the totals to provide a comprehensive overall view of validity statistics. The Court of Claims was treated separately since it is a court of special jurisdiction even though the trial level is coordinate with a District Court, and the full court level is coordinate with a Circuit Court of Appeals.

In all the tables included herein, the 35 USC 290 information provided by the clerks of the various courts was used exclusively, and whenever feasible, each decision was checked in the United States Patent Quarterly (USPQ). It should be noted however, that not all of the decisions for which Section 290 notices were received, were cited in the USPQ. Also, many of the District Courts do not have any reportable decisions of validity or invalidity and these Courts have been omitted from the tables.

Concerning the Circuit Courts of Appeal, the tabulation not only includes a breakdown in a circuit-by-circuit basis, but also includes as a percentage of the totals, the number of decisions reversed where the District Court held the patent valid and the number reversed where the District Court held the patent invalid.

Finally, all of the percentages listed in these tables have been rounded out to the nearest two decimal digits, e.g. 66 2/3% equals 66.67%.

The results of this further study are set forth in the accompanying tables.

CIRCUIT COURTS OF APPEAL

Circuit	Totals*	No. Valid	% Valid	No. Invalid	% Invalid	No. Rev. Prev. Held Valid	% of Total Rev. As To Val.	No. Rev. Prev. Held Invalid	% of Total Rev. As To Inval.
1	12	4	33.33	8	66.67	2	16.65	1	8.34
2	35	6	17.15	29	82.85	6	17.15	3	8.58
3	20	5	25.00	15	75.00	3	15.00	4	20.00
4	22	4	18.20	18	81.80	4	18.20	1	45.50
5	40	20	50.00	20	50.00	3	7.50	4	10.00
6	23	10	43.50	13	56.50	1	4.35	3	13.30
7	56	21	37.50	35	62.50	6	10.70	5	8.93
8	11	1	9.10	10	90.90	1	9.10	1	9.10
9	38	5	13.20	33	86.80	4	10.05	0	0
10	12	5	41.70	7	58.30	0	0	2	16.70
D.C.	2	0	0	2	100.00	0	0	0	0
Totals	271	81	30.00	190	70.00	30	11.10	24	8.85

COURT OF CLAIMS

full court	Total**	No. Valid	% Valid	No. Invalid	% Invalid	No. Rev. Prev. Held Valid	% of Total Rev. As To Val.	No. Rev. Prev. Held Invalid	% of Total Rev. As To Inval.
Total	21	14	66.67	7	33.33	0	0	0	0

* TOTALS INCLUDE ALL HOLDINGS OF VALIDITY OR INVALIDITY FROM THE CIRCUIT COURTS OF APPEAL

** TOTALS INCLUDE ALL HOLDINGS OF VALIDITY OR INVALIDITY FROM THE FULL COURT OF THE COURT OF CLAIMS.

Total of All Circuit Courts of Appeal Plus Court of Claims:

	Total*	No. Valid	% Valid	No. Invalid	% Invalid	No. Rev. Prev. Held Valid	% of Total Rev. As To Val.	No. Rev. Prev. Held Invalid	% of Total Rev. As To Inval.
Total	292	95	32.50	197	67.50	30	10.30	24	8.20

* TOTAL OF ALL DECISIONS FROM THE CIRCUIT COURTS OF APPEAL PLUS THE FULL COURT LEVEL OF THE COURT OF CLAIMS

DISTRICT COURTS
(WITHOUT CONSENT JUDGMENTS)*

First Circuit	Totals**	No. Valid	% Valid	No. Invalid	% Invalid
Massachusetts	16	8	50.00	8	50.00
New Hampshire	3	0	0	3	100.00
Rhode Island	3	1	33.33	2	66.67
Circuit Totals	22	9	41.00	13	59.00

Second Circuit

Connecticut	3	2	66.67	1	33.33
E.D. N.Y.	15	1	6.67	14	93.33
N.D. N.Y.	2	1	50.00	1	50.00
S.D. N.Y.	29	9	31.10	20	68.90
W.D. N.Y.	4	3	75.00	1	25.00
Circuit Totals	53	16	30.20	37	69.80

Third Circuit

Delaware	5	2	40.00	3	60.00
New Jersey	18	9	50.00	9	50.00
E.D. Pa.	19	7	36.80	12	63.20
W.D. Pa.	3	1	33.33	2	66.67
Circuit Totals	45	19	42.25	26	57.75

<u>Fourth Circuit</u>	<u>Totals</u>	<u>No. Valid</u>	<u>% Valid</u>	<u>No. Invalid</u>	<u>% Invalid</u>
Maryland	15	5	33.33	10	66.67
E.D. N.C.	5	1	20.00	4	80.00
W.D. N.C.	0				
South Carolina	5	3	60.00	2	40.00
E.D. Va.	6	2	33.33	4	66.67
W.D. Va.	1	1	100.00	0	0
N.D. W. Va.	3	3	100.00	0	0
Circuit Totals	35	15	42.80	20	57.20

<u>Fifth Circuit</u>					
M.D. Ala.	1	0	0	1	100.00
N.D. Ala.	9	6	66.67	3	33.33
M.D. Fla.	12	7	58.40	5	41.60
N.D. Fla.	2	2	100.00	0	0
S.D. Fla.	19	16	84.20	3	15.80
M.D. Ga.	4	4	100.00	0	0
N.D. Ga.	4	2	50.00	2	50.00
E.D. La.	2	2	100.00	0	0
N.D. Miss.	1	1	100.00	0	0
N.D. Tex.	19	14	73.70	5	26.30
S.D. Tex.	15	12	80.00	3	20.00
W.D. Tex.	3	2	66.67	1	33.33
Circuit Totals	91	68	74.70	23	25.30

<u>Sixth Circuit</u>					
E.D. Ky.	1	1	100.00	0	0
E.D. Mich.	16	7	43.70	9	56.30
W.D. Mich.	1	1	100.00	0	0
N.D. Ohio	20	9	45.00	11	55.00
C.D. Ohio	1	1	100.00	0	0
S.D. Ohio	8	3	37.50	5	62.50
E.D. Tenn.	4	2	50.00	2	50.00
M.D. Tenn.	4	4	100.00	0	0
W.D. Tenn.	3	3	100.00	0	0
Circuit Totals	58	31	53.40	27	46.60

<u>Seventh Circuit</u>					
N.D. Ill.	93	55	59.20	38	40.80
S.D. Ill.	5	3	60.00	2	40.00
N.D. Ind.	7	6	85.70	1	14.30
S.D. Ind.	5	1	20.00	4	80.00
E.D. Wisc.	16	12	75.00	4	25.00
W.D. Wisc.	4	1	25.00	3	75.00
Circuit Totals	130	78	60.00	52	40.00

<u>Eighth Circuit</u>					
E.D. Ark.	1	0	0	1	100.00
W.D. Ark.	2	2	100.00	0	0
N.D. Iowa	1	1	100.00	0	0
S.D. Iowa	1	1	100.00	0	0
Minnesota	5	1	20.00	4	80.00
E.D. Mo.	5	1	20.00	4	80.00
W.D. Mo.	2	0	0	2	100.00
S.D. Mo.	1	1	100.00	0	0
Nebraska	4	0	0	4	100.00
Circuit Totals	22	7	31.80	15	68.20

TEXT

(PTCJ) 2-14-74

<u>Ninth Circuit</u>	<u>Totals</u>	<u>No. Valid</u>	<u>% Valid</u>	<u>No. Invalid</u>	<u>% Invalid</u>
Arizona	1	1	100.00	0	0
C.D. Calif.	40	18	45.00	22	55.00
E.D. Calif.	4	0	0	4	100.00
N.D. Calif.	17	8	47.10	9	52.90
S.D. Calif.	2	1	50.00	1	50.00
Hawaii	1	1	100.00	0	0
Nevada	1	0	0	1	100.00
Oregon	2	0	0	2	100.00
E.D. Wash.	1	0	0	1	100.00
W.D. Wash.	1	1	100.00	0	0
Idaho	4	1	25.00	3	75.00
Circuit Totals	74	31	41.90	43	58.10
<u>Tenth Circuit</u>					
Colorado	8	6	75.00	2	25.00
Kansas	10	6	60.00	4	40.00
N.D. Okla.	1	0	0	1	100.00
W.D. Okla.	4	2	50.00	2	50.00
Utah	2	0	0	2	100.00
Circuit Totals	25	14	56.00	11	44.00
<u>Dist. of Col.</u>					
	2	0	0	2	100.00

* ALL CONSENT JUDGMENTS OF VALIDITY HAVE BEEN ELIMINATED FROM THIS TABLE.

** TOTAL DECISIONS AS IN PREVIOUS TABLES EXCEPT THAT CONSENT JUDGMENTS HAVE BEEN ELIMINATED.

Totals of All District Courts Not Including Court of Claims:

<u>Total*</u>	<u>No. Valid</u>	<u>% Valid</u>	<u>No. Invalid</u>	<u>% Invalid</u>
557	288	51.80	269	48.20

* THIS TOTAL REPRESENTS ALL OF THE DECISIONS EXCLUDING CONSENT JUDGMENTS FOR ALL OF THE DISTRICT COURTS.

COURT OF CLAIMS

<u>trial level</u>	<u>Total*</u>	<u>No. Valid</u>	<u>% Valid</u>	<u>No. Invalid</u>	<u>% Invalid</u>
	12	5	41.70	7	58.70

Totals of All District Courts Plus The Court of Claims trial level:

<u>Total**</u>	<u>No. Valid</u>	<u>% Valid</u>	<u>No. Invalid</u>	<u>% Invalid</u>
569	293	51.50	276	48.50

* THIS TOTAL INCLUDES ALL OF THE DECISIONS (EXCLUDING CONSENT JUDGMENTS) OF THE COURT OF CLAIMS TRIAL LEVEL.

** THIS TOTAL INCLUDES ALL OF THE DECISIONS (EXCLUDING CONSENT JUDGMENTS) FROM ALL THE DISTRICT COURTS AND THE COURT OF CLAIMS TRIAL LEVEL WHICH IS COORDINATE WITH A DISTRICT COURT.

